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Drug and Cosmetic Industry

MARCH 1958

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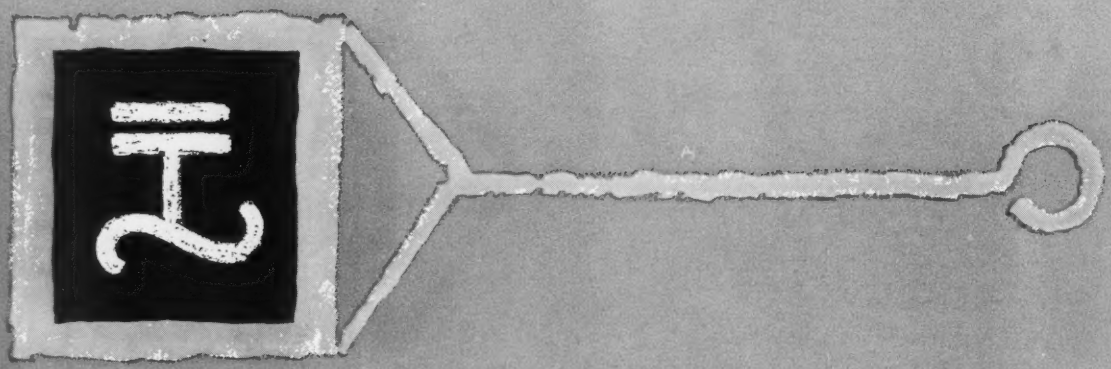

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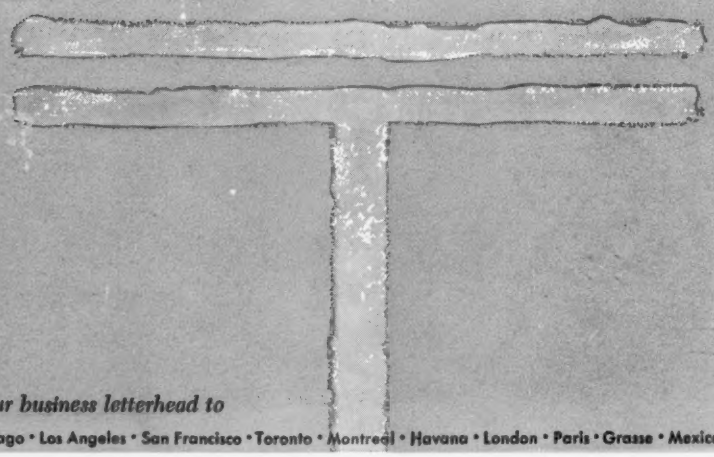

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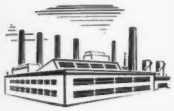
Riboflavin-5′-Phosphate Sodium Roche*

A highly-soluble source of riboflavin

(An Original Roche Development)

PREFERRED PRODUCT FOR MANY PHARMACEUTICALS

PATIENTS	Better taste in oral preparations, and practically no bitter taste.	Less pain on injection of parenterals because of the presence of fewer solids.				
PHYSICIANS	Pleased patients please physicians.	Better taste in orals. Fewer "bitter-taste" complaints from patients.	Smaller dose volume with higher potency solutions.	Less pain with parenterals. Greater patient acceptability.	Fewer complaints from patients. Less wasted time for doctors.	
MANUFACTURING DEPARTMENT 	High and rapid solubility.	Compatible in multivitamin formulae.	Economical, less time and labor in compounding.	No solubilizer needed.	Make clear solutions of 30 mg. or higher per ml. of water.	No special techniques required. Relieve technical department problems.
SALES & ADVERTISING DEPARTMENTS	Better taste; more palatable in high concentrations.	Less pain on injection. Pleased patients ease the doctor's day.	Smaller dose volume required with higher potency solutions.	Pleased physicians are better prospects for other ethical preparations in your line.	*Need a sample and technical data sheet? We'll gladly send both. They're free.*	
MANAGEMENT	New, all-time low price for Riboflavin-5′-Phosphate Sodium Roche .	Economy; lower manufacturing cost raises profit margins.	No solubilizer needed, thus saving extra cost.	Improves present products, makes them easier to sell.	Better your product and you will sell more of it.	Lower inventory costs; less materials required for higher solubility.

TECHNICAL NOTES The theoretical B_2 content of riboflavin-5′-phosphate sodium is 73%. The Roche product has 70 – 73%.

Roche Riboflavin-5′-Phosphate Sodium is identical with the natural flavin mononucleotide which occurs in the "yellow" respiratory tissue enzyme system. Being so, it has immediate biological activity.

ABOUT COSTS Roche Riboflavin-5′-Phosphate Sodium now costs less than ever. This reduced price permits you to make even greater savings compared to the cost of highly-concentrated solutions containing regular riboflavin and a solubilizer.

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*ROCHE—Reg. U.S. Pat. Off.

Drug and Cosmetic Industry

Contents **March 1958 Vol. 82 No. 3**

Cover by Joel

Feature Articles

301 **1957 Pharmaceutical Products Parade**
by Paul de Haen

302 **Drug and Cosmetic Law**

304 **Aspirin and Buffered Aspirin**
by Joseph Kalish, Ph.D.

306 **The Perfumer's Vocabulary**
by J. R. Elliott

308 **Latin-American Drug Laws**
by Victor C. Folsom

310 **Geranium Bourbon**
by Steffen Arctander

312 **The Hydrophile-Lipophile Balance of Gums (Conclusion)**
by A. H. C. Chun, R. S. Joslin and A. N. Martin

314 **Modern Toothpaste Manufacture**
by Marvin Cook

337 **Taxable and Nontaxable Cosmetics**

●

Packaging and Selling Section

321 **Nitrogen Aerosols**
by Francis A. Mina, Ph.D.

325 **How Public Relations Helps Sell Bristol-Myers Products**
by James L. MacWithey

329 **Packaging and Selling**
by Frazer V. Sinclair

336 **News in Packaging**

●

Departments

293 **Keeping Posted**
by Thomas R. Farrell

339 **Patent Thoughts and Trends**
by Thomas Cifelli, Jr.

344 **News**

359 **Management Forum**
by Francis Chilson

368 **Perfumer's Shelf**
by Joseph Kalish, Ph.D.

371 **Compounder's Corner**
by Joseph Kalish, Ph.D.

374 **Industry's Books**
by Harry G. Kelbly

376 **Advancing Therapy**
by Joseph Kalish, Ph.D.

378 **Skin Research**
by Joseph Kalish, Ph.D.

382 **Trade Literature**

384 **Reader's Questions**
by Joseph Kalish, Ph.D.

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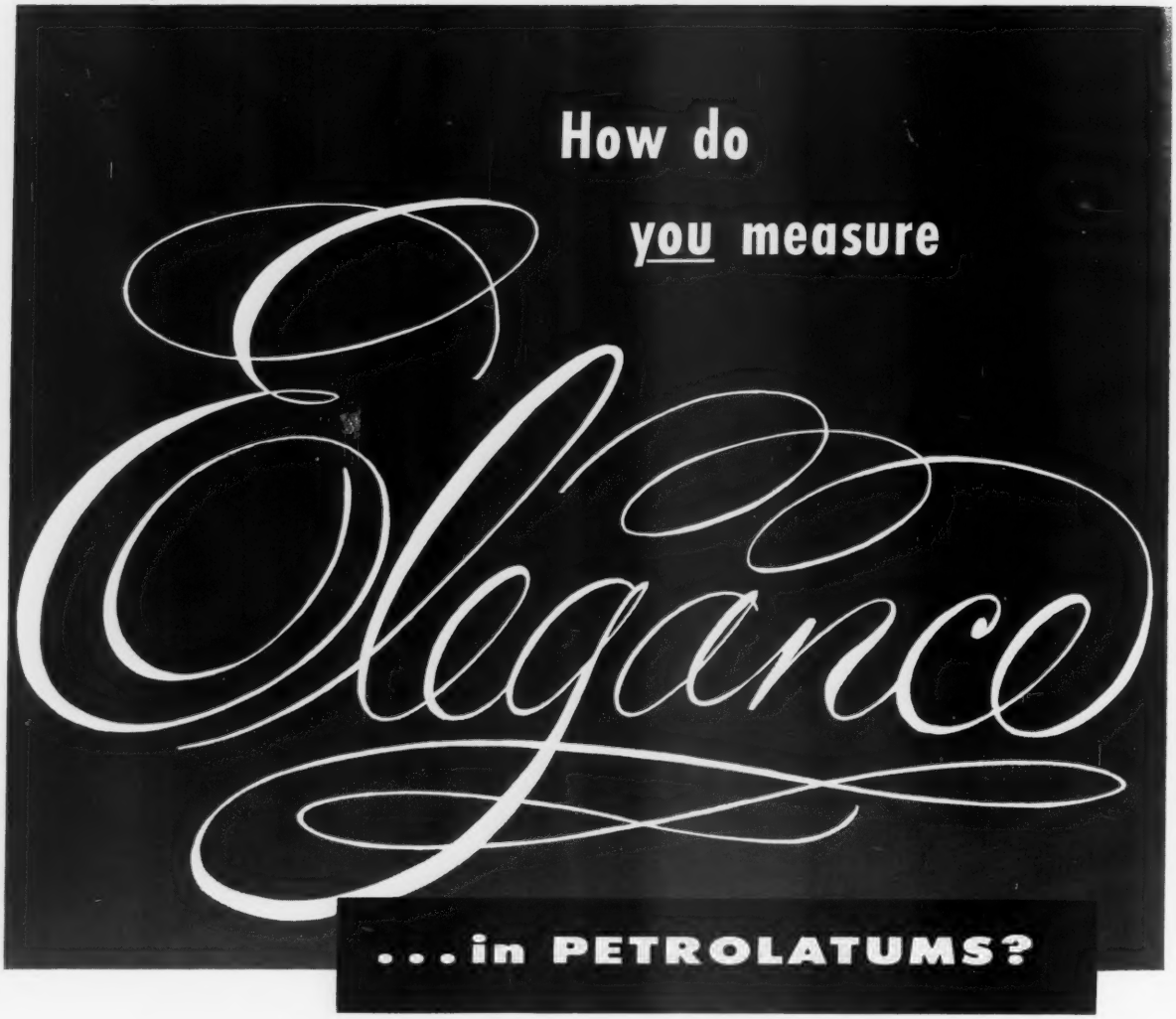

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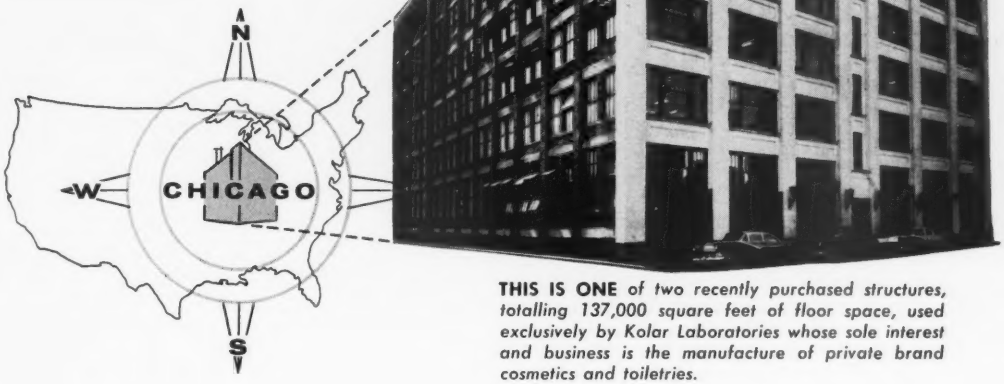

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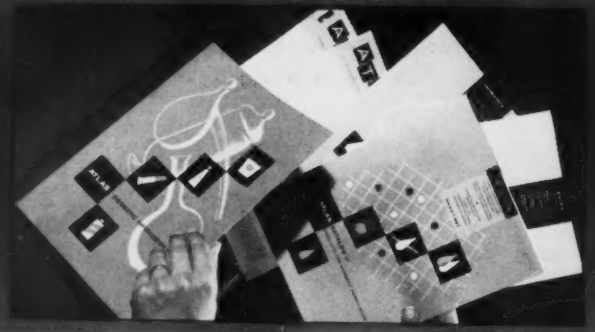

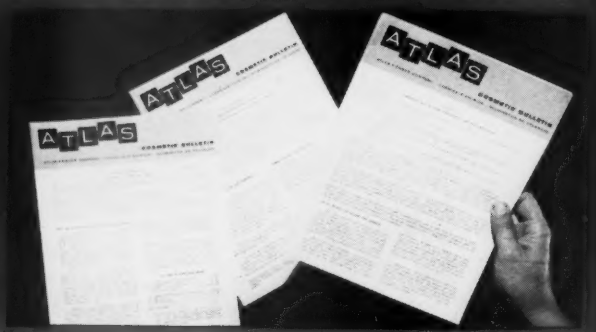

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THE NOSE – FANCY AND FACT

FACT

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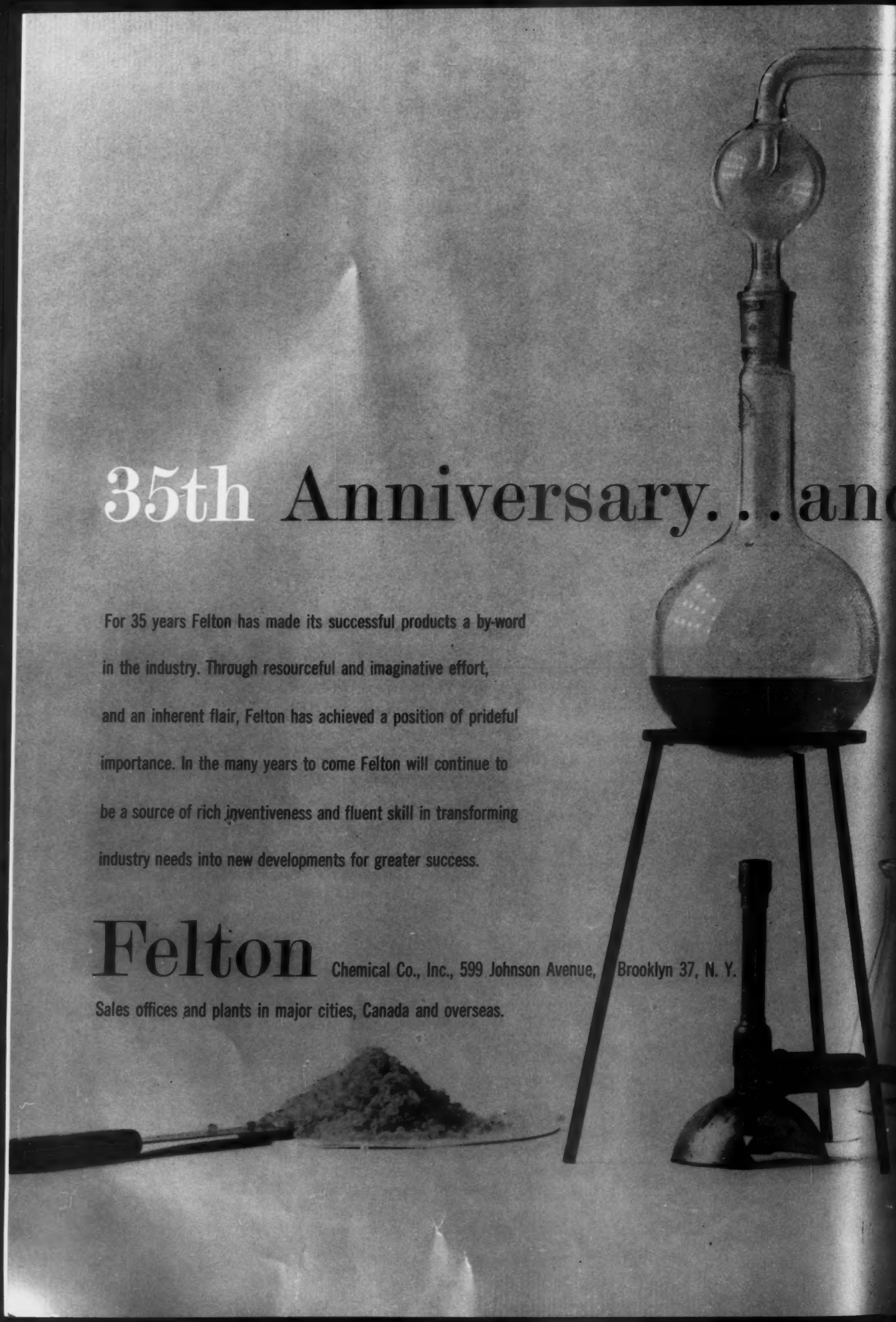
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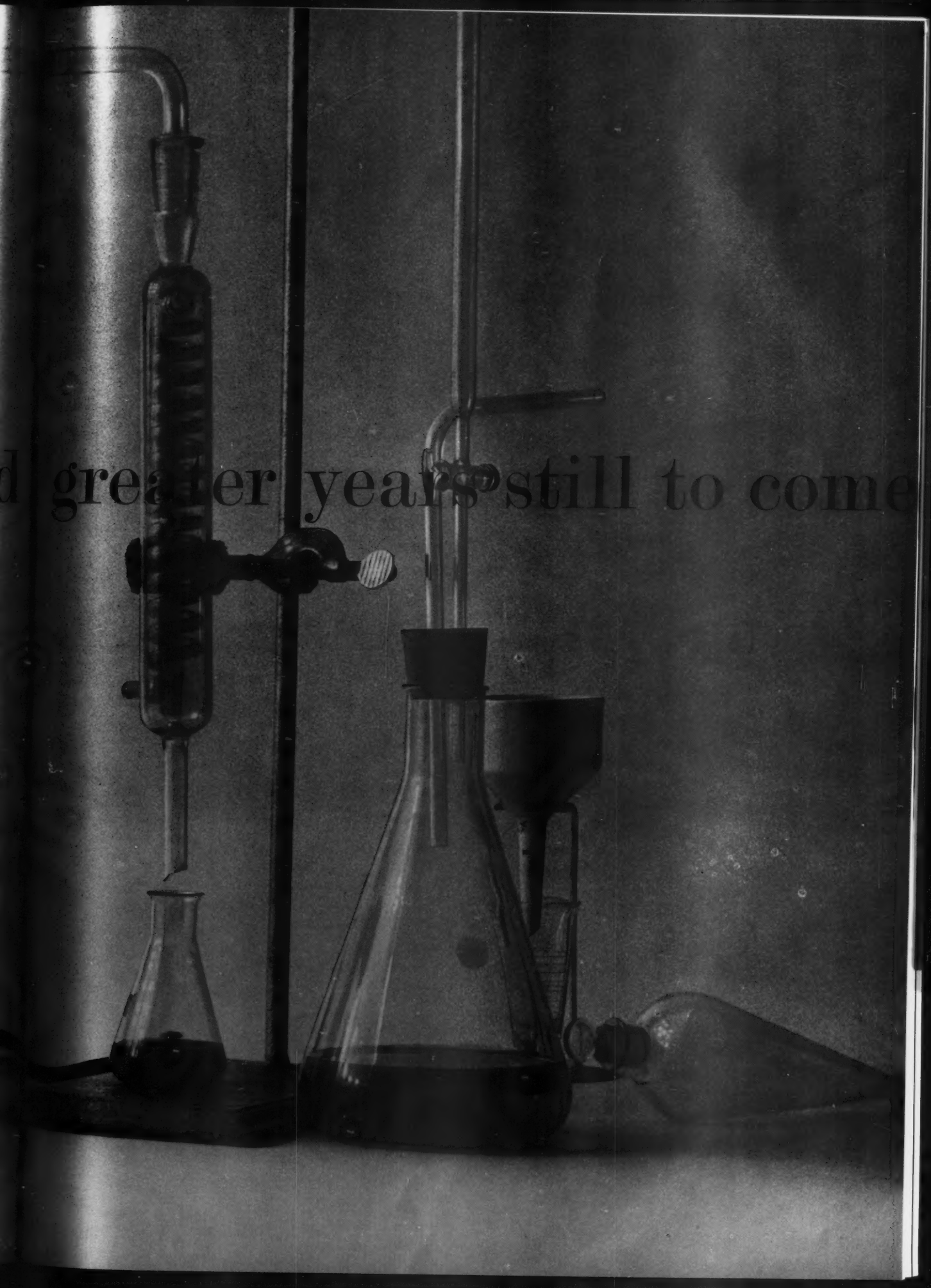
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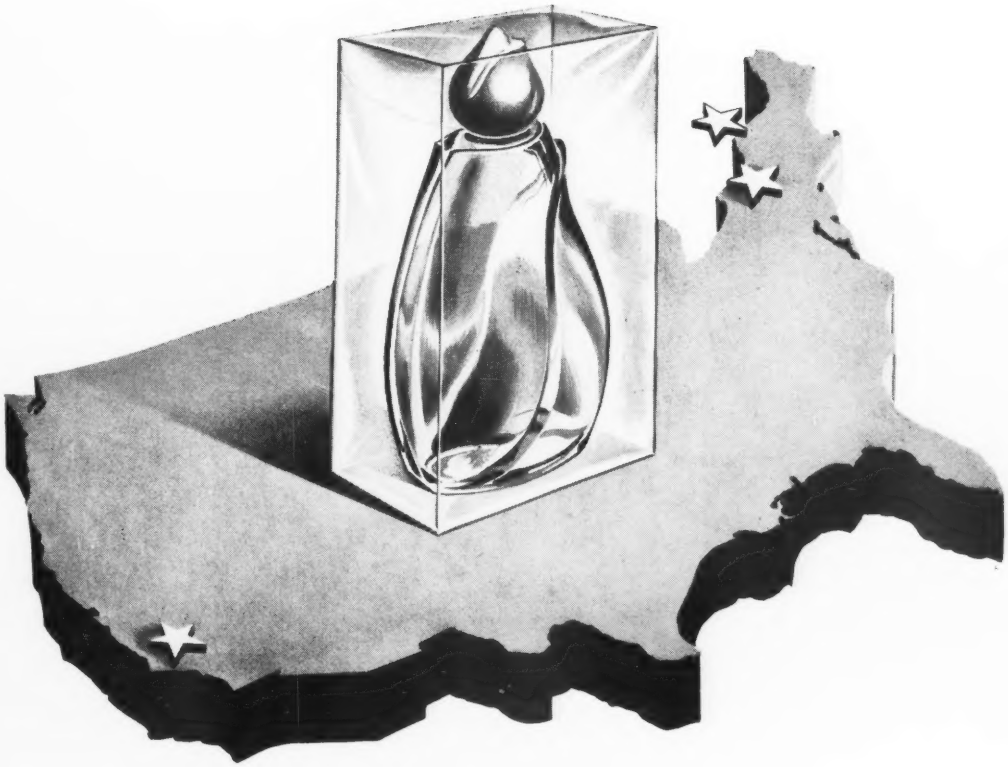

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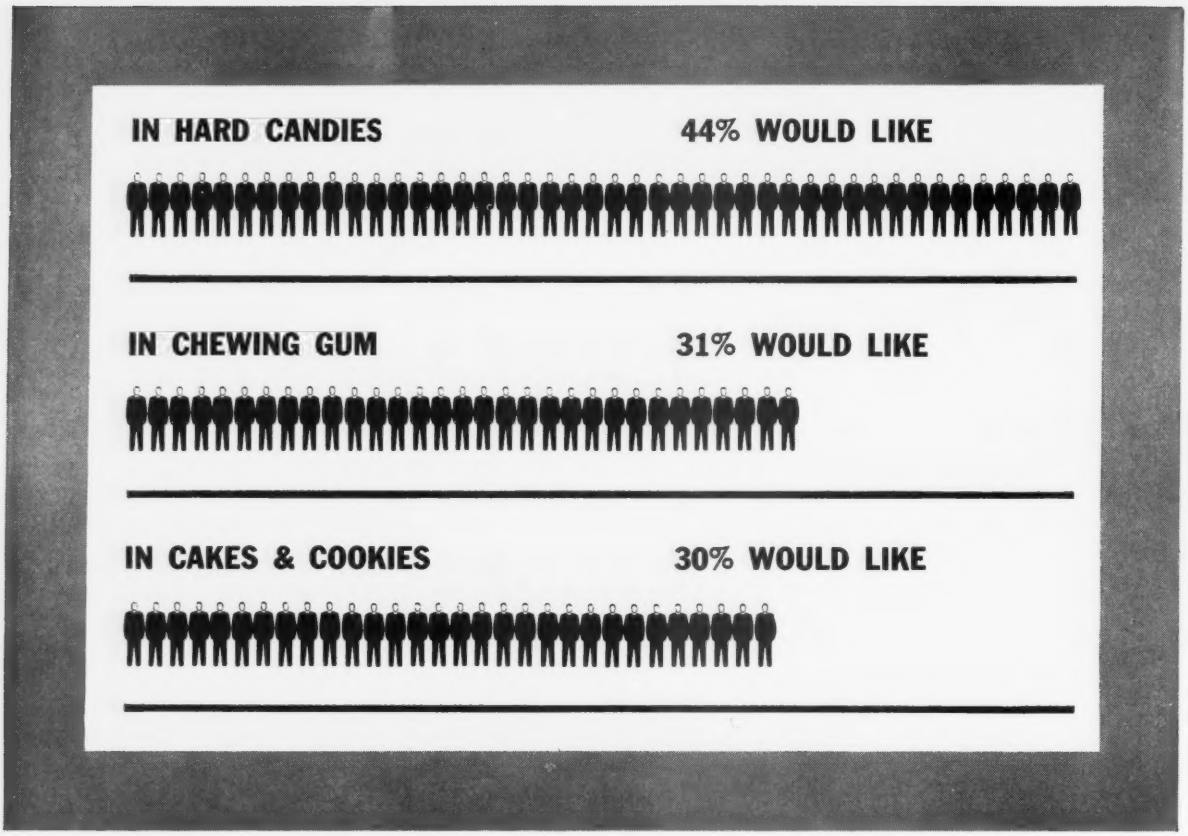

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First consideration will be given to work which has come to a clear-cut point of accomplishment during the current year; but work carried on in previous years, the significance of which has been confirmed by commercial application in 1958, also will be eligible.

Entries will be judged by a committee of three persons of outstanding reputation and scientific background, having no connection with the Association or its members.

METHOD OF NOMINATION—Nominations must be made on the official entry blank, which may be obtained by writing to: Awards Committee, Glycerine Producers' Association, 295 Madison Avenue, New York 17, N. Y.

All nominations for the 1958 awards must be received by November 1, 1958 to be eligible.

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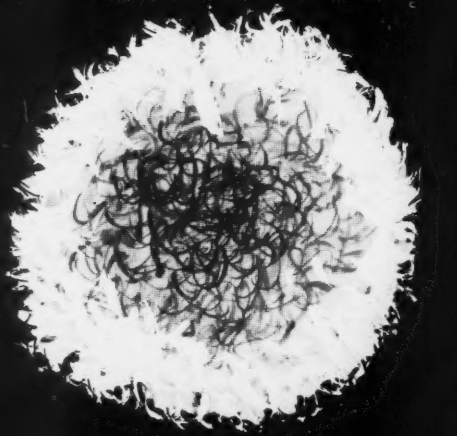
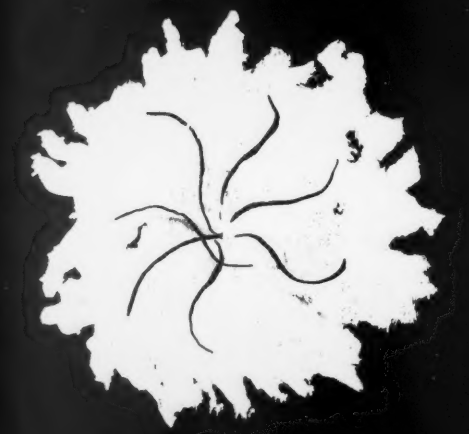


...as *modern* as tomorrow ...as *practical* as today!



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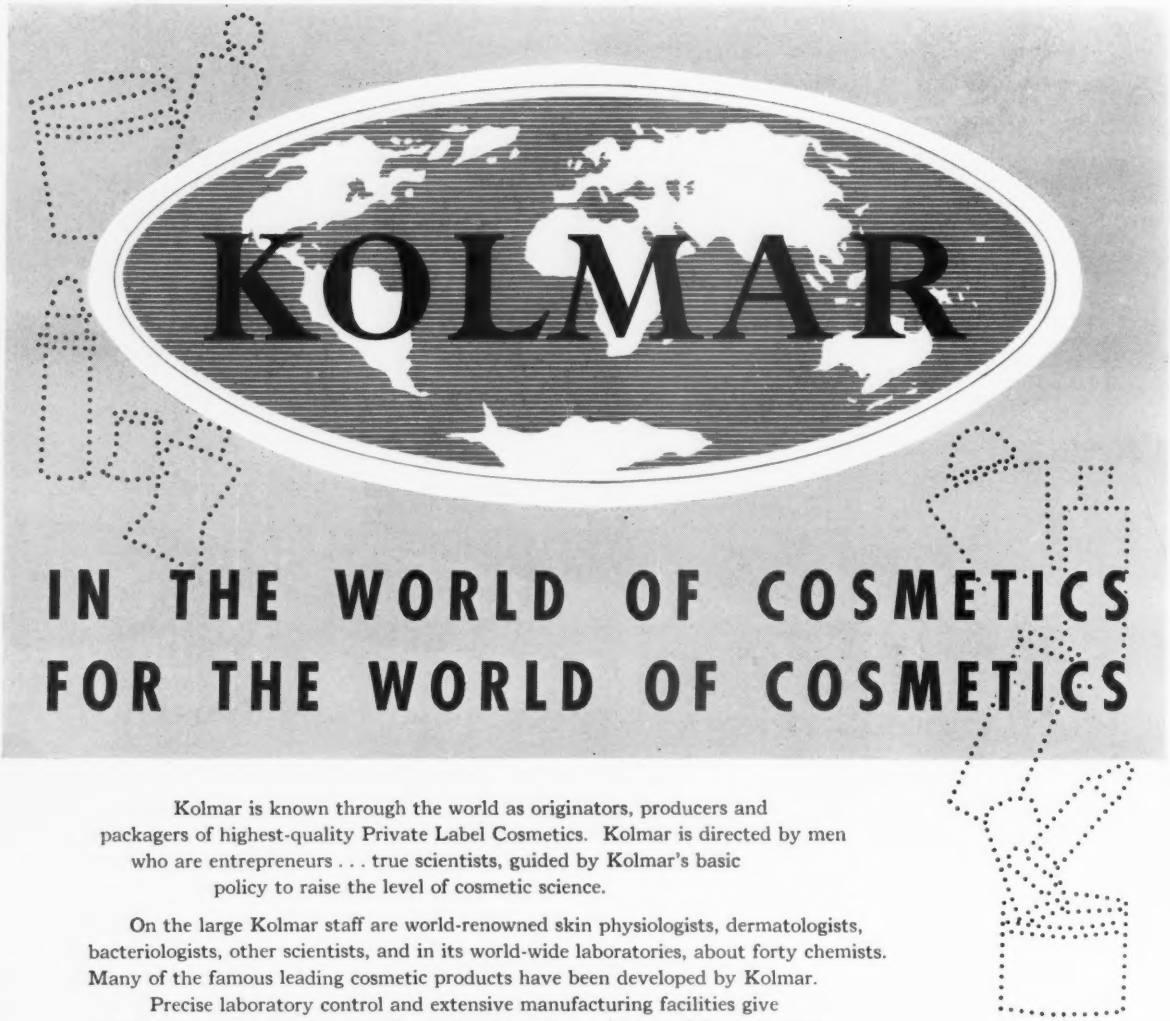

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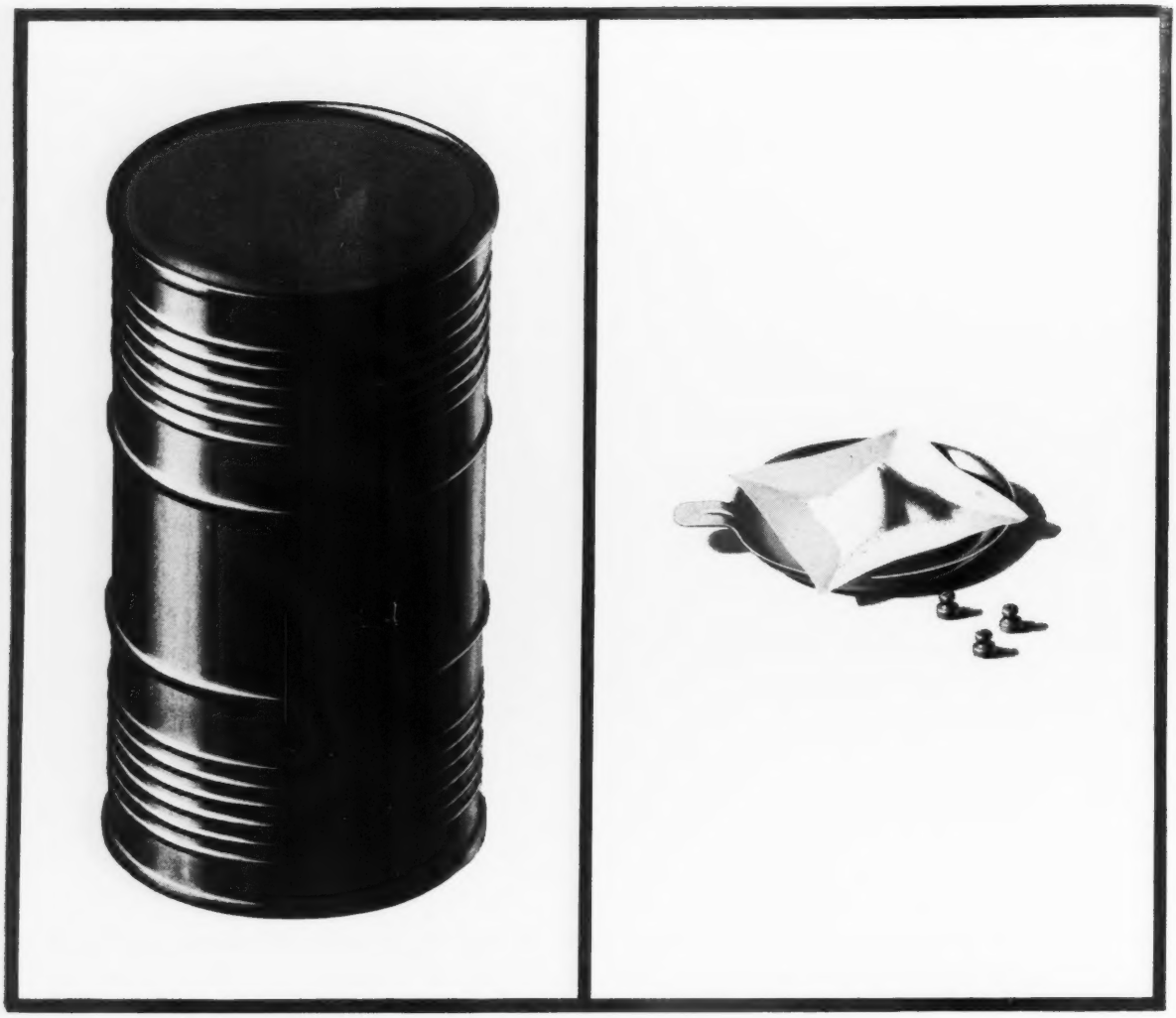

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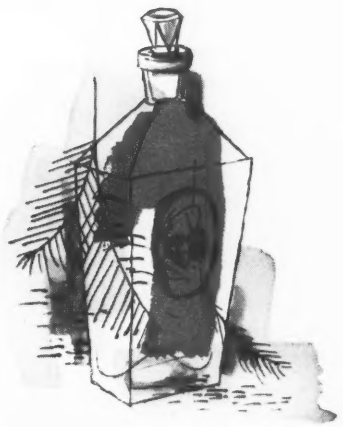

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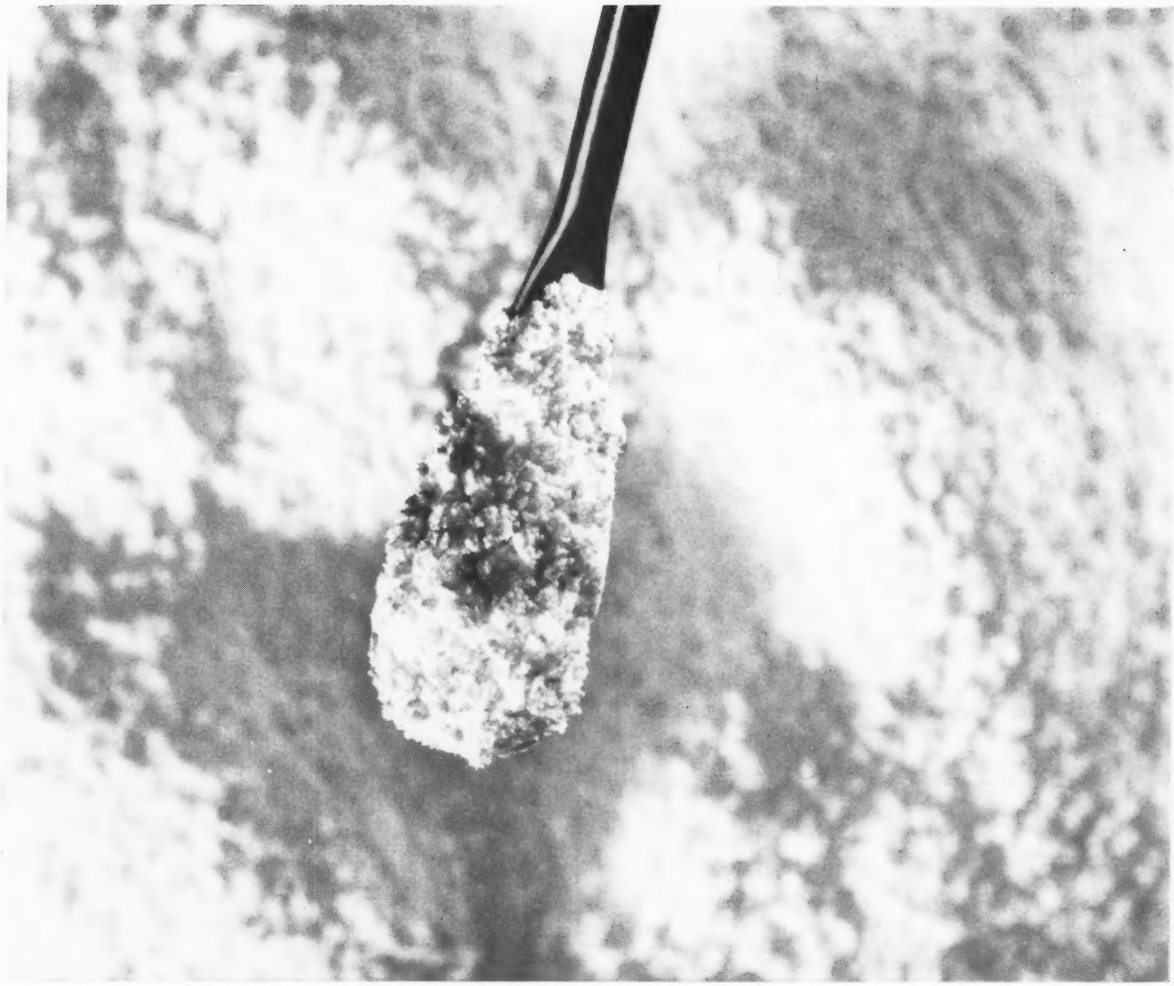

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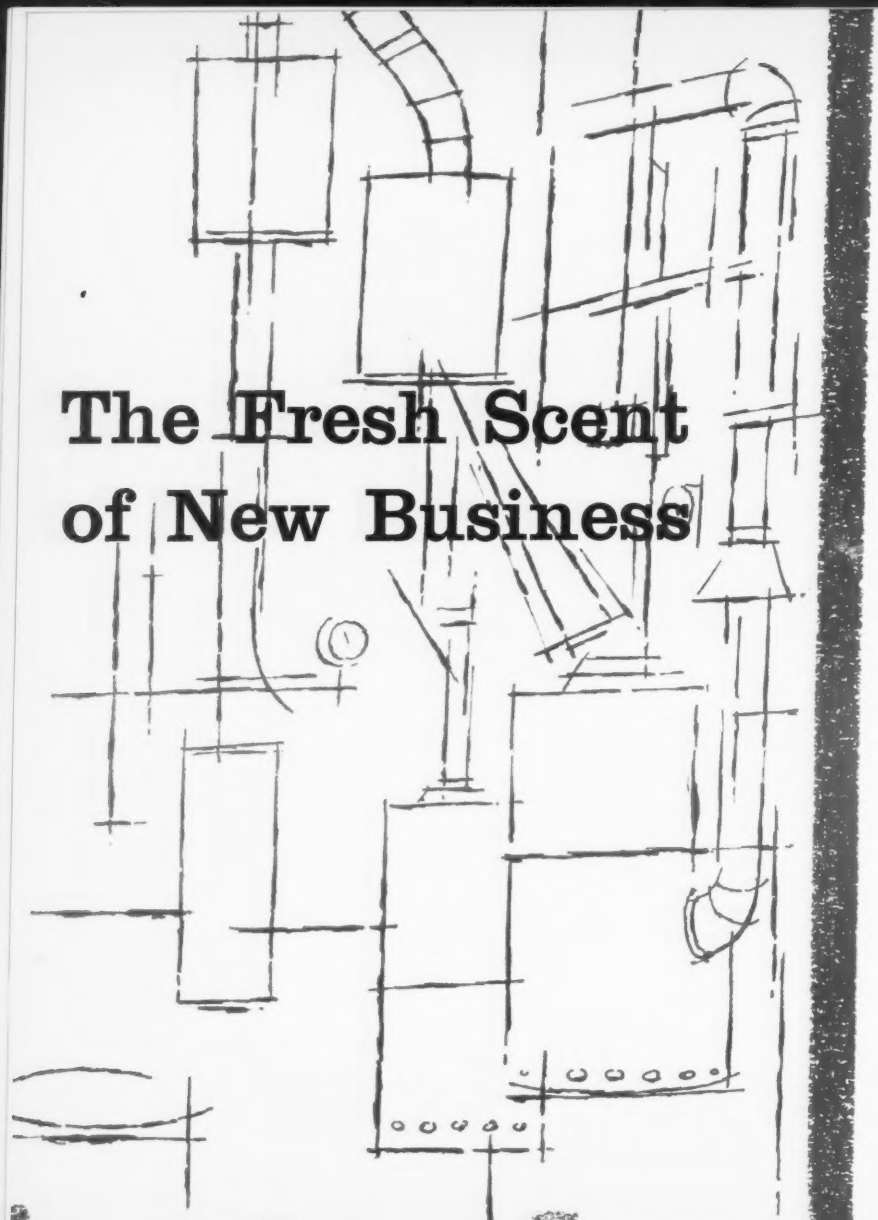

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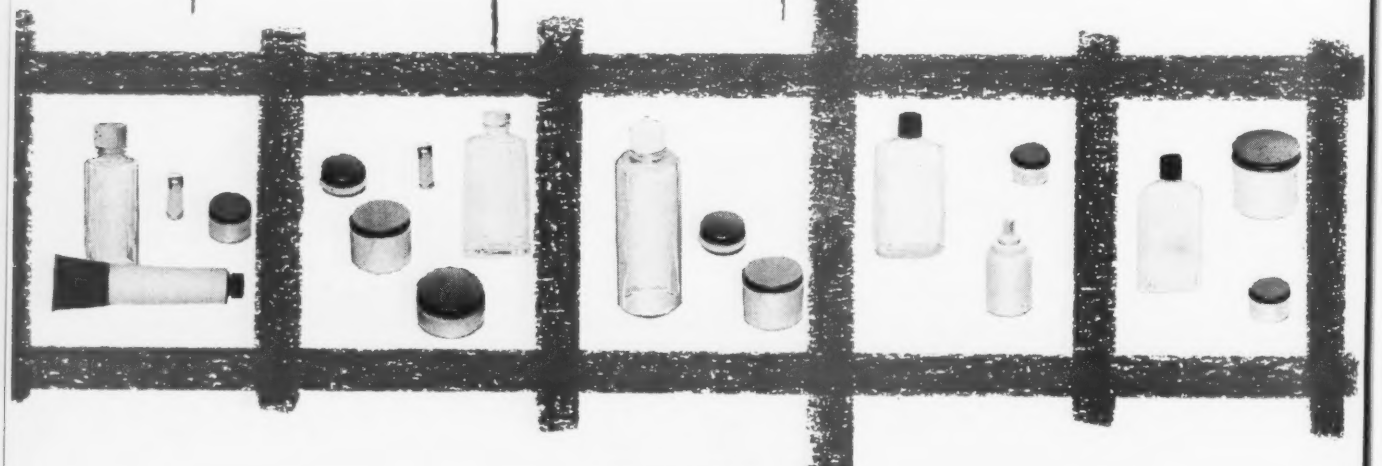

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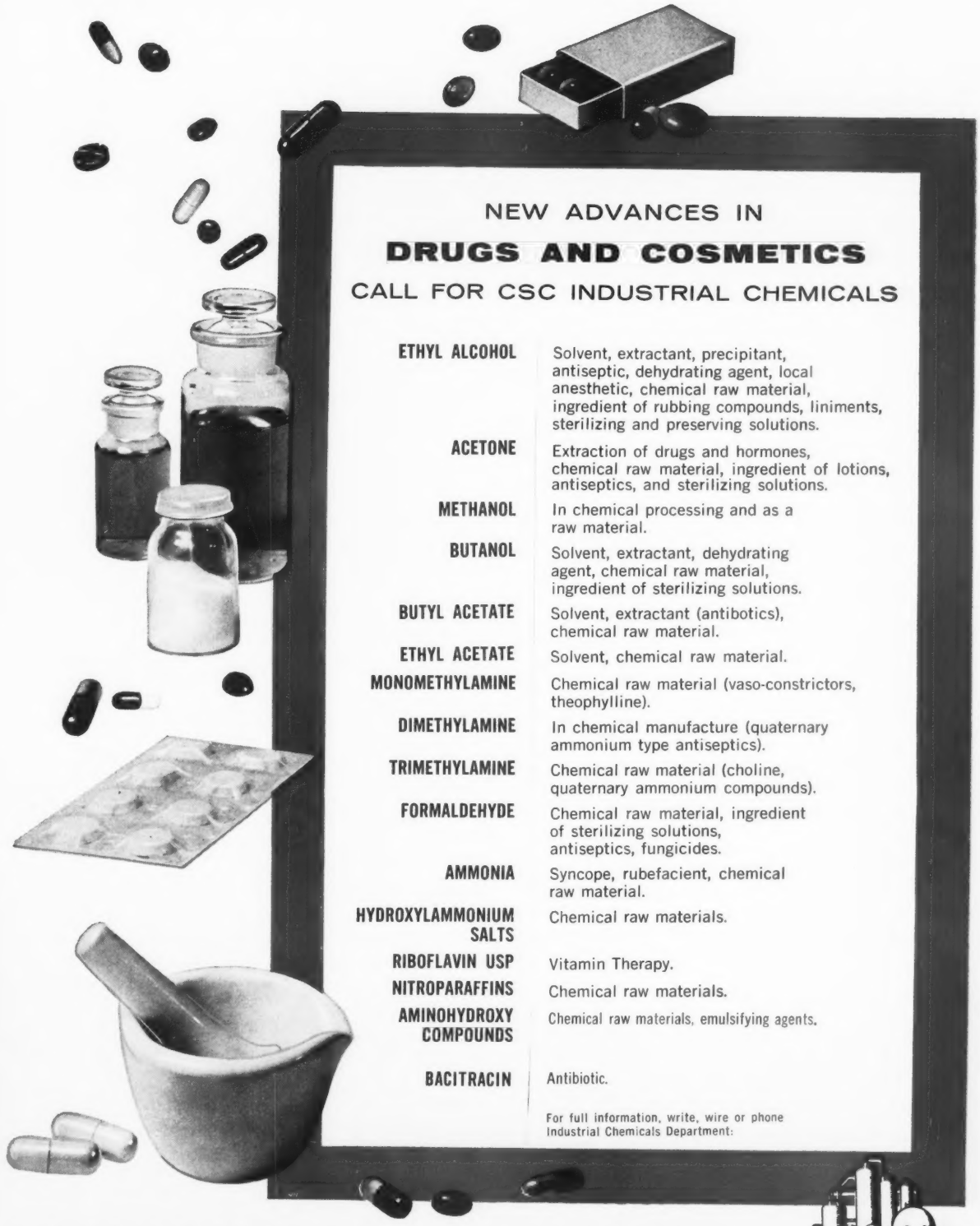

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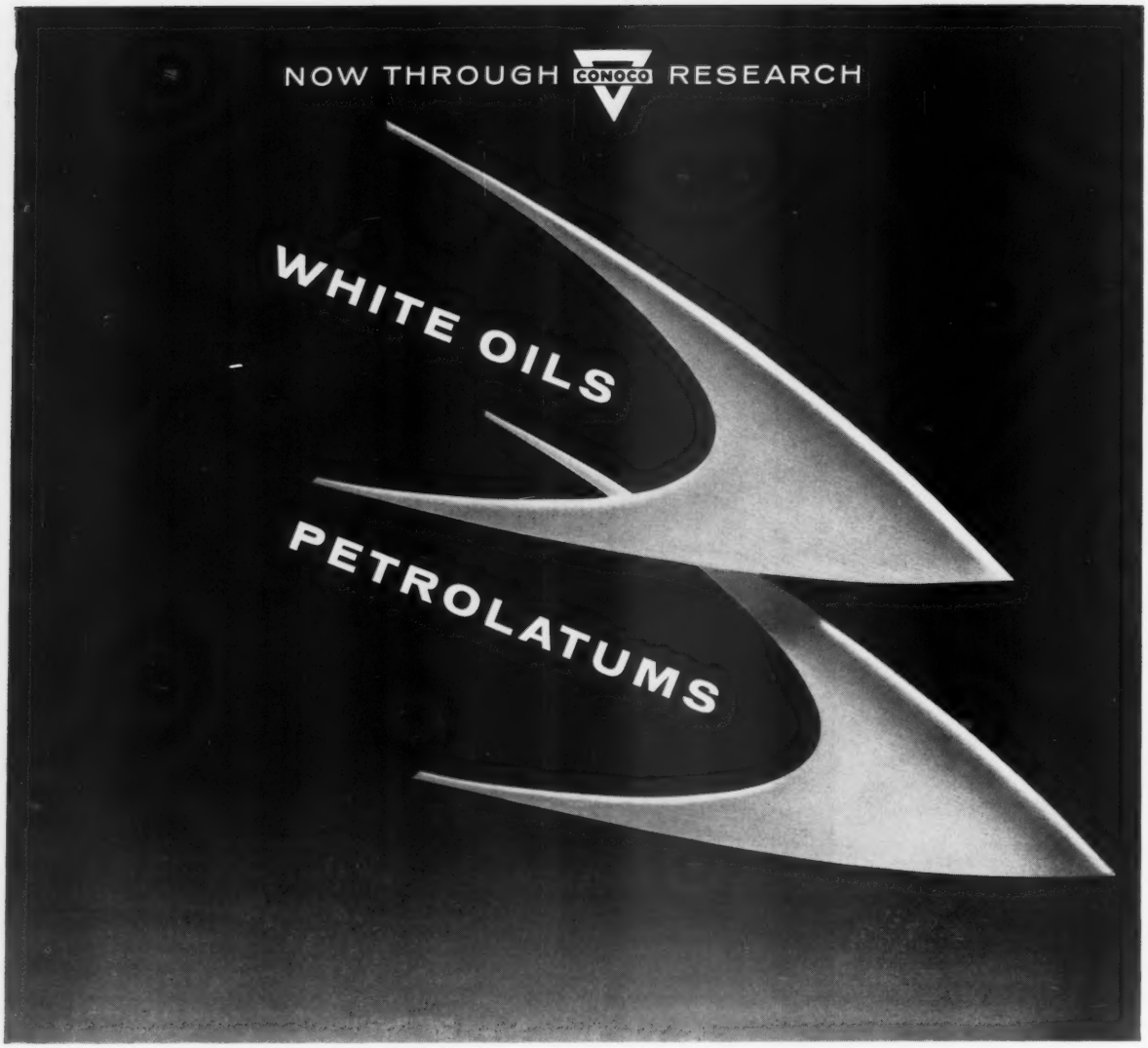

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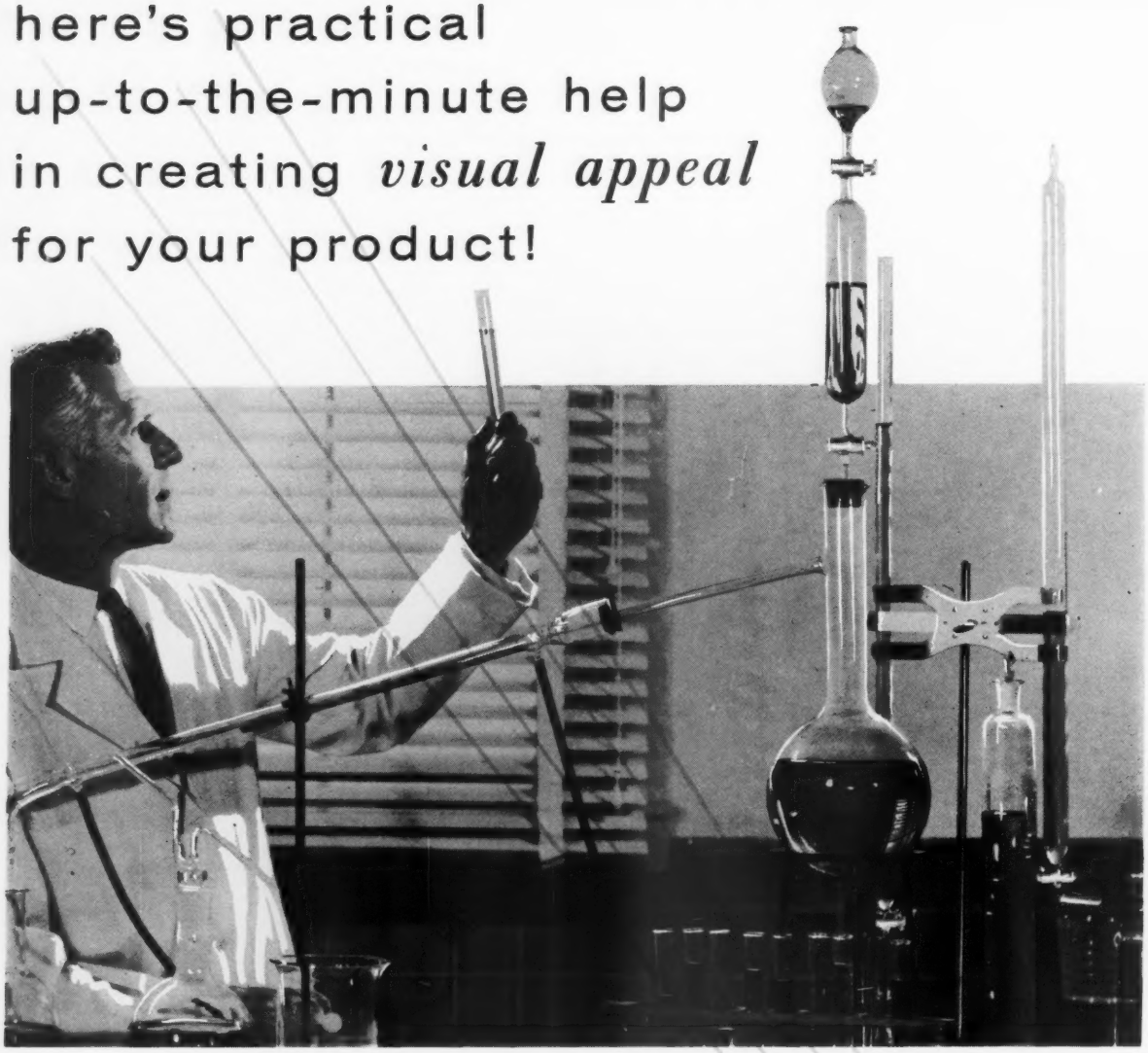

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Keeping Posted

Warner-Lambert Facts

No merger plans are afoot at the present time, Alfred E. Driscoll, president of Warner-Lambert Pharmaceutical Company, told the New York Society of Security Analysts early last month, at the same time saying that if an opportunity arose by which the investment possibilities of the shareholders another company and those of Warner-Lambert could be improved, it would certainly be carefully considered. Reporting that world-wide sales for 1957 would total over $176.2 million, compared $153.3 million in 1956, Mr. Driscoll said that pre-tax earnings would total about $29 millions, amounting to about $14 million after taxes. This results in per share earnings for 1957 of $5.43 on the 2,581,000 shares, compared with the 1956 figure of $4.63 on 2,467,000 shares. Giving effect to the two 2 per cent stock dividends distributed in 1957, the comparison becomes $5.43 versus $4.45 per share.

When Warner-Hudnut stock was first offered to the public in 1951, toiletries and cosmetics accounted for 70 per cent of domestic volume. But by 1957 this situation was reversed so that 59 per cent of domestic sales is in pharmaceuticals, ethical and proprietary combined. Sales in toiletries and cosmetics in 1957 represented 18 per cent, the balance being 8 per cent drug sundries, and 15 per cent plastic and glass containers. The drug sundries came through the acquisition of the Pro-Phy-Lac-Tic Brush division of Lambert, and the glass containers come through the acquisition of the Maryland Glass Company division of Emerson Drug Company.

During 1957, all major divisions contributed to the gain in sales volume, and each maintained or improved its profit contribution. Particularly pointed out in this connection were the Warner-Chilcott and Nepera Laboratories operations in the ethical field; the Super Anahist preparations in treatment of colds; Listerine Antiseptic operations; and over-all activities abroad.

The Warner-Chilcott Division spent 8.9 per cent of sales for research in 1957 and plans to spend the same percentage in 1958. This research is being conducted in the usual areas such as control of blood pressure, arthritis, tranquilizers and energizers, cardio-vascular diseases, and the thyroid, among others.

Pointing out that the total market in home permanents had been in a decline during the past few years, due to a variety of causes, including changes in hair styles, the rise in income levels to permit more frequent visits to the beauty parlor, as well as the advent of hair sprays and other setting compounds, Mr. Driscoll said there is now evidence that the trend is reversing in that consumer purchases at the end of 1957 were above those at the close of 1956. Further, he said, the introduction of new types of home permanents and kits is bound to have a stimulating effect on the total market. Mr. Driscoll said that while sales of all home permanents was up only 10 per cent from 1954, Warner-Lambert's sales of these products were up 200 per cent from 1954. This fact, he declared, will give the company a bigger stake in future increases.

FTC Can Select Actions

The U. S. Supreme Court has decided that the Federal Trade Commission does not have to bring charges and issue orders against all in an industry before issuing an effective order against one industry member. It will be recalled that, a little over a year ago, a manufacturer of electrical equipment appealed an FTC order to the Circuit Court of Appeals. The order was issued against a practice of having four different schedules of discounts based on volume of purchases. The court agreed that the discount schedules were illegal, but supported the plea of the defendant that if he had to obey the order, while there were no similar orders against 16 competitors, he would suffer unduly and probably be put out of business. The court ruled that the FTC order be stayed until the competitors were brought under the same kind of order. Another similar case in another circuit resulted in a decision upholding the Commission that the order become effective immediately. In an

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E-735 and E-535 are suggested for hair fixative applications including hair sprays, wave set lotions, hair tints and dyes. E-335 is especially suitable for films such as spray-on bandages, protective face masks and gloves, protective coatings for silverware and, with dyes, for tinted decorative sprays. All three copolymers are of interest in pharmaceutical applications.

PVP/VA Copolymers are compatible with many modifiers and plasticizers so that hygroscopicity, flexibility, and abrasion resistance may be varied over a wide range.

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unanimous decision, the court said: "The Commission alone is empowered to develop that enforcement policy best calculated to achieve the ends contemplated by Congress and to allocate its available funds and personnel in such a way as to execute its policy efficiently and economically."

Glycerine in Cosmetics

In discussing Glycerine for 1957, E. Scott Pattison, manager of the Glycerine Producers Association, had the following to say:

"The output of toilet goods, cosmetics, including tooth pastes and shaving creams, has been reported as gaining during these last few years, at a somewhat more rapid pace than population. What we have lost to dry shavers we seem to have gained in aerosols. The conventional tooth paste formulations seem to survive each year's crop of additives. While we in the Association will certainly deny that there is such a thing as detergent hands, we will not protest the rising use of glycerine-containing hand emollients to combat the condition—whatever its source. In 1957, for the seventh successive year, the United States had a record crop of babies. I have not converted this into an annual increase in square inches of skin, but as girl babies among them grow up, no doubt your imagination will sense the increased potential for glycerine-containing surface conditioners. Back in 1950, an informal estimate was made of 24 million pounds for toilet goods and drugs taken together. This might be up to 30 million by now."

As to the processing of glycerine, Mr. Pattison said: "Producers of glycerine as a co-product of soap and fatty acids, judging by past indications, do not have the same interest in *investing new capital* in derivatives to extend the glycerine market. Their concern is to dispose of glycerine, rather than to center an interrelated multi-product chemical business around it. They will probably continue to shy away from building new captive consumption by paths that require major capital expense, as distinct from such use in toilet goods."

Unwholesome or Not?

The Supreme Court of Florida, in a case in which it was called upon to determine whether worms are deleterious or unwholesome (Food Fair Stores of Florida, Inc. v. Macurda), said:

"To certain tribes of American Indians we understand that such creatures as worms, grasshoppers, snails and the like are acceptable as delicious morsels of food. We are told that canned Mexican worms grace the shelves of many delicatessens and in certain swank social levels, which few of us ever reach, it is said that roasted snails are available with the trays of hors d'oeuvres at the pre-dinner cocktail party. However, for the masses who have moved ahead of the Indians but who perhaps have not yet reached the 'snail set,' such invertebrates as worms and snails are generally frowned upon as totally unwholesome and unfit for human consumption."

From a paper on Product Liability before the Food, Drug, and Cosmetic Law Section, New York Bar Association, by William J. Condon.

Avon Tops Revlon; Crosses $100 Million

In the race for top place in the cosmetic manufacturing industry, Revlon not only failed to equal or pass the dollar volume of Avon Products in 1957, but Avon pulled away in both sales and earnings by fairly substantial margins. In 1956, Avon led Revlon in sales by a slight margin of $86,826,342 for Avon, against $85,767,651 for Revlon. Furthermore, in 1956 Avon fell slightly behind Revlon in earnings with $8,127,271 for Avon, against $8,375,502 for Revlon.

However, in 1957, Avon's sales increased sixteen per cent to $100,379,694, while Revlon's sales increased only eleven per cent to $95,174,546. Also, Avon's profits increased fifteen per cent to $9,342,505, while Revlon's profits increased only 7½ per cent to $8,999,337.

This is the first time that any cosmetic manufacturer has reached $100 million sales.

Colgate Decision and Prices

The Colgate decision of 1919 in the case of United States v. Colgate Company, under which the right to refuse to sell was upheld in instances of price-cutting as a reason, has come up for more attention as a result of the very recent case of United States v. Parke Davis in which Gerhard A. Gesell, of Covington & Burling, Washington, D.C., on a motion for a judgment of acquittal in a criminal prosecution under Section 1 of the Sherman Act, successfully invoked the Colgate doctrine to uphold P.D.'s plan of recommending resale prices to distributors and retailers and cutting off those who refused to follow the suggested price line.

In dismissing the Parke, Davis indictment, Judge Tamm said: "When representatives of Parke, Davis & Company went to the Gilpin people or the District Wholesale Drug Company, they said in effect, you can dispose of these goods as you see fit, but if you sell them to retailers that are not maintaining our prices, we will not sell to you in the future. I think that doesn't constitute an agreement when the wholesaler, looking to his own future business and his future financial interest, decides he is going to maintain this price."

Also in a recent case, Adams-Mitchell Co. v. Cambridge Distributing Co., where a majority of the judges of the Second Circuit Court of Appeals, in holding that the evidence did not indicate the presence of an agreement to fix prices, stated: "There are legitimate means of price maintenance in spite of the provisions of the Sherman Act, . . . Such means include a refusal to sell in the future to those who had not maintained a suggested price."

In discussing this subject before the Antitrust Section of the New York Bar Association, Whitney North Seymour said:

"Does this resuscitation of the Colgate doctrine mean that a seller could effectively enforce resale price maintenance by a continuous and systematic policy of refusing to sell in the future to price cutters? The practical implication of accomplishing indirectly that which cannot be done directly leads me to believe that such a plan would be difficult to

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keep within the sanctuary of even a rejuvenated Colgate doctrine. Since, outside of fair trade, resale price contracts are unlawful per se, the courts will scrutinize the evidence with great care to see if it is sufficient to sustain a finding of an agreement or combination with cooperating distributors. The effective implementation of such a policy is bound to run the grave danger of laying the evidentiary basis from which such a finding may be drawn. The essential element of agreement or combination might be found in the manufacturer's conduct of policing activities, the uniformity of prices among distributors or the natural interest which distributors show in policing the resale price being charged by competing distributors.

"Although the Colgate doctrine cannot be regarded as sure protection for the maintenance of a general resale price system with elaborate and frequent enforcement, it should no longer be regarded as in the limbo where many practitioners once thought it had been cast. It still may be used to justify action against an occasional price cutter who may be causing havoc in a distribution system. However, even here care should be exercised to build as good a record as possible. In this connection it would seem advisable to be decisive in cutting off a distributor, since, if conferences are held with him and he stays on and stops price cutting, an inference of agreement might be drawn."

Drug Dollar Volumes

The market for antibiotics now stands at $300 million a year at manufacturers' level and is still growing, according to Joseph L. de Cillis, Chas. Pfizer director of marketing, Tranquilizers, at $125 million a year, are also still going up, he told the western section of the American Pharmaceutical Manufacturers' Association. Mr. de Cillis said that sales of anti-nauseants and antihistaminics are holding steady, while those of vitamins and hematinics are actually declining. Drugs for cardiovascular diseases are strong, he reported, with sales running at $100 million annually.

Hormones in general, according to Mr. de Cillis, account for about $107 million a year at present, of which prednisone and prednisolone account for half. Cortisone and hydrocortisone sales now stand at $25 million, sex hormones at $29 million, and all other hormone products at $12 million.

FDA and Royal Jelly

While the Food and Drug Administration is paying practically no attention to royal jelly when used in cosmetics, its use in internal preparations sold with therapeutic claims is another matter. Some of the claims made for internal preparations include protection against premature aging, treatment of cancer, ulcers, diabetes, infectious hepatitis, and baldness. The FDA claims that a new drug application must be filed for such preparations. Helena Rubinstein's Beauty for Life Capsules have been siezed, as have products of Royal Jelly Enterprises, Napa, Calif., Freshman Vitamin Company, South Pasadena, Calif., and Bee Royale, New York.

Pharmaceutical Advertising

Medical journals published in this country carried 76,495 pages of advertising in 1957, and on the basis of their circulation, these advertisements provided an opportunity for 143 billion exposures to the medical profession, Dr. J. Mark Hiebert, president of Sterling Drug, told the Pharmaceutical Advertising Club. Dr. Hiebert estimated that the total expense incurred by the pharmaceutical manufacturing industry for all selling activities, plus journal advertising and direct mail, amounts to "only 12½ per cent of the consumer's prescription dollar."

Dr. Hiebert stressed the importance of the pharmaceutical manufacturer's role as a "pharmaceutical intelligence service." By communicating with physicians through professional service representatives, journal advertising and direct mail, the pharmaceutical firms help busy practitioners keep up with numerous techniques and advances, Dr. Hiebert explained, many doctors might well be unaware of new medical advances for some time after their development. Of course, new drug discoveries are reported in medical and professional journals, but the backlog of such clinical reports is often so great that it may be months before they are published.

New Federal Fair Trade Bill

The federal bill to reestablish fair trade throughout the country was introduced into Congress last month. The bill, HR 10527, entitled a bill "to equalize rights in the distribution of identified merchandise," was introduced in the House of Representatives by Representative Oren Harris (Dem., Ark.), chairman of the House Interstate and Foreign Commerce Committee.

This is the bill on which the Bureau of Education on Fair Trade has been working for the past year. The bill would legalize resale price maintenance on a national scale for manufacturers who distribute their trademarked products through channels of distribution which include most of the independent retailers and wholesalers in the country. The bill would amend the Federal Trade Commission Act to permit manufacturers of identified merchandise to establish and enforce minimum or stipulated resale prices on such merchandise by giving actual notice of the established prices to wholesalers and retailers handling the products. The bill would "equalize rights in the distribution of identified merchandise" by affording manufacturers, who distribute their trademarked products through independent wholesalers and retailers, "an opportunity to compete on more nearly equal terms" with manufacturers who may now legally control their resale prices in distributing their products through consignees or employees. The legislation would also afford the small retailer "an opportunity to compete on more nearly equal terms with the large retailer" by curbing price wars on trademarked products.

The bill is written in terms of interstate commerce. If enacted, it would cover the entire United States and the territories, as an implementation of national public policy of eliminating unfair methods of competition. Since the bill provides that a manu-

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facturer's established price on his trademarked product becomes enforceable through actual notice to his distributors, the bill eliminates the contract provision and the non-signer clause of the state acts.

To assure competition among products price-fixed under the bill, it is provided that the rights of the bill are available only to those manufacturers whose identified products are in free and open competition with articles of the same general class produced by others. Under the bill, a manufacturer also functioning at wholesale or retail levels may establish resale prices on his identified merchandise for his distributors even though he sells in competition with them, so long as he sells at the applicable prices he has established for his distributors making comparable sales.

The bill permits not only suits for the recovery of damages and for injunctive relief, but also for the recovery of reasonable attorney's fees.

Still the American Fair Trade Council continues to press for enactment of its bill which would enforce price maintenance through refusing a price-cutter to handle any products with a manufacturer's trademark on them. The manufacturer, through his property rights in his trademark, would be able to allow or refuse to let distributors handle his goods according to how the distributors acted with regard to resale prices.

However, Dr. John Dargavel, executive secretary of the National Association of Retail Druggists and chairman of the Bureau of Education on Fair Trade, wrote to John W. Anderson, president of the Council:

"The bill (HR 10257) reflects the thinking of some of the finest legal minds in the United States, and of their work over a period of almost two years . . . I know that all of the friends of fair trade and small business over the country and in the Halls of Congress profoundly hope that the American Fair Trade Council will join with us so that a united front can be presented in working for the enactment of this carefully developed legislation."

Court to Review Perfume Import

The U. S. Supreme Court has granted certiorari and will review the adverse lower court decisions in the control of imports by individuals of perfumes of Corday, Guerlain, and Lanvin. The lower court ruled that each perfumer company is a relevant market by itself and that Section 526 of the Traiff Law does not apply to companies which are affiliates or subsidiaries of foreign houses. Since this action by the Supreme Court stays the decisions of the lower court, restriction to import of only one bottle of the perfumes of these companies will be effective at least until the high court gives its opinion.

Searle Buying Steroid Firm

G. D. Searle & Co. is acquiring Root Chemicals, Inc., of Puerto Rico, and its subsidiary, Productos Esteroides, S.A., of Mexico, a major source of raw materials used in manufacture of various steroid drugs. Root, organized by Dr. I. V. Sollins, is headquartered in San Juan, Puerto Rico, and operates a Mexican installation located near Mexico City. Root will be a wholly-owned subsidiary of Searle and Dr. Sollins will continue in the management. Root's basic product is diosgenin, which is obtained from barbasco root. Disgenin is the starting material used by Root for manufacture in its two plants of progesterone, dihydro-iso-androsterone, 16-dihydro-presnenolone, pregnenolone, and compound S, all of which are intermediates used by makers of the cortisones and other steroid products.

Bristol Joins N.P.C.

Bristol Laboratories having become a member of the National Pharmaceutical Council, that organization now has a total of twenty-two members. Beside Bristol, the members are: Abbott, American Home, Ames, Burroughs Wellcome, Ciba, Geigy, Hoffmann-La Roche, Lederle, McNeil, Mead Johnson, Merck Sharp & Dohme, Wm. S. Merrell, Ortho Pharmaceutical, Pitman-Moore, Pfizer, Searle, Smith Kline & French, Squibb, Upjohn, Warner-Chilcott, and Winthrop. . .

Dr. Philip I. Bowman, president of Bristol Laboratories, will represent his company on the Council's board of directors.

Formed in 1954, the major aim of NPC is described as "the development of the highest standards of ethics and integrity in the drug industry in order to promote the interests of the public, physicians and all levels of pharmacy."

Pfizer Sales by Divisions

Chas. Pfizer & Co., gives the breakdown of its record sales volume of approximately $205 million (up approximately 15 per cent from 1956) into the following figures for its various divisions: Pfizer Laboratories $60 million; Roerig Division $12 million; Chemical Division $41 million; Agriculture Division $15 million; and International Division $77 million.

Glycerine Fellowship

A $6,000 fellowship, provided by the Glycerine Producers' Association for support of research contributing to the knowledge and understanding of glycerine and its reactions, has been awarded to Stanley Levy, a graduate assistant in chemistry at Case Institute of Technology, Cleveland. The fellowship provides a $3,540 stipend, full tuition and expenses for Levy who was appointed by Dr. T. Keith Glennan, Case president. Although a native of Cleveland, Levy holds an M.S. degree from Brooklyn Polytechnic Institute.

Warsene Capsule Claims Stopped

The Federal Trade Commission has approved a consent order which prohibits representations that Warsene Capsules, of the Warson Products Corp., St. Louis, are an effective treatment for pains of arthritis and rheumatism. Also prohibited are claims that the capsules contain any analgesic ingredient other than salicylamide or that they are made like a doctor's prescription. However, future advertising

truthfully may tell how doctors use the capsules.
The complaint also charged that the product was misrepresented as a buffered formula and the result of research. However, the Commission's attorney did not believe that these allegations could be sustained on available evidence, and, therefore, the order does not prohibit these claims.

Ohio Fair Trade Invalidated

The Fair Trade Act of Ohio has been invalidated by the highest court of that state so far as the non-signer clause is concerned. This means that 14 states have invalidated fair trade acts, 12 as to the non-signer clause, and two as to the entire acts. The Ohio Supreme Court held, as have other states, that the non-signer provision of the law "represents an unauthorized exercise of the police power, . . . delegates legislative power to private persons, . . . unconstitutionally denies the owner of property the right to sell it on terms of his own choosing."
Adding the three states—Missouri, Texas, and Vermont—which never have had fair trade acts, makes 17 states in which fair trade is a dead item. Ohio is considered the most important state from a market viewpoint to lose fair trade.

Dow Leases Circuit to Europe

For commnicating with their European offices and subsidiaries, The Dow Chemical Company has leased a new radio circuit between New York and Zurich, Switzerland, from RCA Communications and Radio-Suisse. The radio channel is a Dow private line that operates 24 hours a day, seven days a week, but Dow will only use the line Monday through Friday. The new facility is arranged so that New York and Zurich stations can send or receive messages any time of the day at a transmission speed of 15 words per minute. The existing teletype system serving Dow in the United States is hooked in New York to the new radio channel to Zurich which in turn acts as a relay station for Dow offices in Zurich, Rotterdam, and Stockholm, and Nederlandshe Dow Maatschappij, N.V., a Dutch subsidiary in Rotterdam. This provides a direct contact between the European offices and any Dow location in this country.
The opening of this circuit is the start of a planned, fully integrated and privately operated network connecting Dow, Dow Chemical International Limited, and Dow Chemical Inter-American Limited throughout the world.

N.D.T.C. Drug Study Committee

The National Drug Trade Conference committee to "study the classification of drugs to be confined in sale to supervision by registered pharmacists,"—which committee was authorized by resolution of the Conference at its annual meeting last december—consists of the following members:
John K. Worley, general counsel, A.D.M.A.; Frank Dierson, associate general counsel, A.P.M.A.; George Frates, Washington representative, N.A.R.D.; Robert P. Fischelis, secretary and general manager, A. Ph. A.; James F. Hoge, general counsel, Proprietary Association; Harry A. Kimbriel, executive vice-president, N.W.D.A.; Ray C. Schlotterer, executive secretary, F.W.D.A.; Hugo Schafer, retired dean, Brooklyn College of Pharmacy, American Association of Colleges of Pharmacy; Thomas J. Golden, National Association of Chain Drug Stores; and Harold Kinner, executive secretary, District of Columbia Pharmaceutical Association, National Association of Boards of Pharmacy.

Lehn & Fink Buys Stock

Lehn & Fink Products Corporation purchased, last month, 60,200 shares of the company's stock from United Whelan Corporation. There had been repeated reports that United Whelan, headed by Charles Green who led proxy battles against several large corporations, wanted to merge with Lehn & Fink, or wanted Lehn & Fink to merge with other companies. The stock was bought for $28 per share. At the end of 1957, there were 386,500 shares of Lehn & Fink common outstanding.

A.D.M.A. International Section

An International Section has been established in the American Drug Manufacturers Association which is to be "devoted to technical, legal, financial, and other pertinent and related problems incident to the international operations of association members." The general counsel of the association will serve on the new section ex-officio to advise on legal problems. It is expected that specialized committees within the section will be organized, such as law, medical, financial, administration and others, to work on appropriate common problems in the international field, similar to present association activities in domestic areas. Harry Mallinson, president of Eli Lilly International Corporation, will serve as chairman of the section.

Pittman-Moore Research Center

Pittman-Moore is planning a new research center to be located northwest of Indianapolis with construction of a $1.5 million building to be started this month. This new research center, on a tract of 170 acres and occupying a major portion of this tract, will house all pharmaceutical research and development and will provide for enlargement of research activities—both physical and personnel. The new planning will permit doubling of the research staff. The building, containing 40,000 square feet of floor space, will be windowless, completely air conditioned, and of single story brick construction. It is designed into six independent expandable sections: 1) chemistry, 2) pharmaceutical product development, 3) pharmacology, 4) offices, library and seminar room, 5) boiler room and maintenance area, and 6) mechanical equipment, supply and storage area. Already in operation on the same grounds and part of the research activities are virus research laboratories, a pathology laboratory and a research farm. The virus research center and the pathology laboratory have both just been enlarged by major additions.

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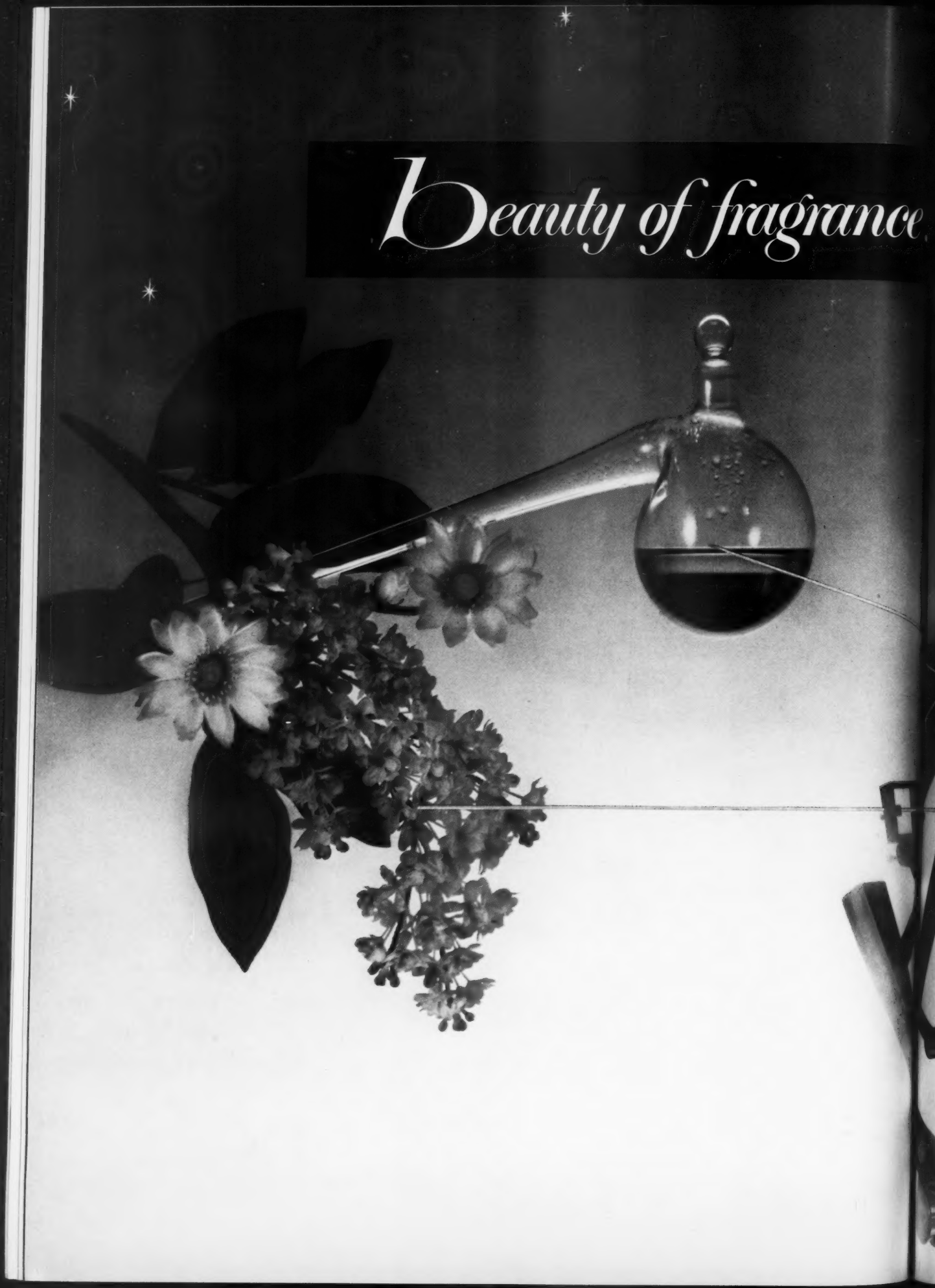
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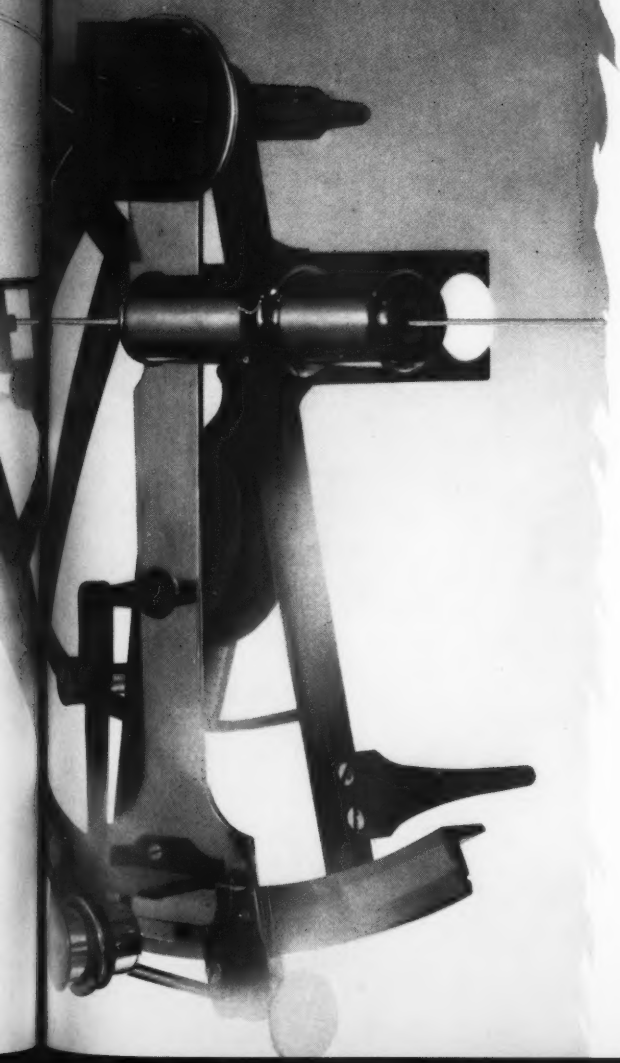

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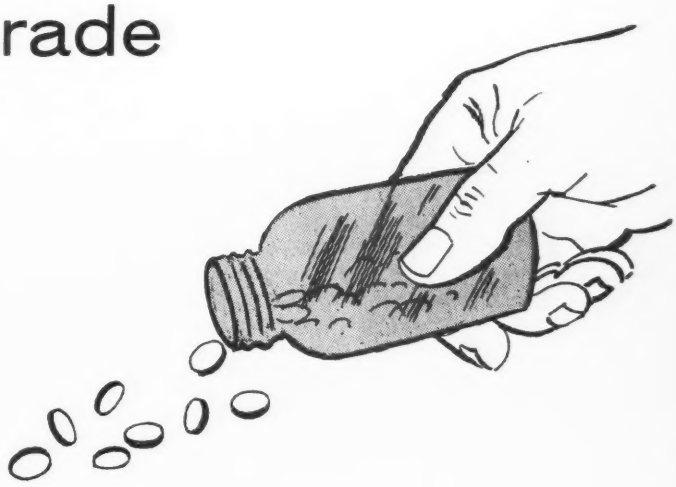


The pharmaceutical industry is answering the current recession by continuing to place on the market about the same number of new products as in the past. Four hundred products with an additional ninety-six new dosage forms, a total of 496 new items were made available in 1957. To this have been added many new strengths of old products. The majority of these preparations are marketed nationally. The preponderant type of product is still the combination preparation consisting of two or more ingredients; of these 261 were marketed in 1957.

The $110,000,000 to $120,000,000 spent annually by the industry on research is paying its way, and more new single chemical entities have been presented in 1957 than in any previous year: a total of 51. This is a tribute to hard work and imagination, and to the realization that real progress depends on research. Abbott Laboratories introduced six new chemical entities, Lilly and Merck Sharp & Dohme each following with four. Searle continued their policy of introducing preferably only products of this nature, and provided the medical profession with three preparations. Nine of the fifty-one new chemicals have been developed abroad.

Where has there been real progress and success? The most publicized product has no doubt been Orinase (tolbutamide-Upjohn), representing the first acceptable oral therapy for certain forms of diabetes. Of these new sulfanylureas developed in Germany so far, only one, tolbutamide, has made the grade; the other produced too many side-effects and Lilly discontinued further research with it. But Eli Lilly were unusually successful with two other products: Darvon (dextropropoxyphene HC1.) a new analgesic with the potency of codeine, producing less side-effects, and V-Cillin-K (penicillin V potassium). Darvon is also available in combination with APC. These products seem to have found immediate acceptance and use during the Asian flu epidemic of last fall. Wyeth combined the new analgesic ethoheptazine citrate with aspirin and has offered it under the name of Zactirin. The analgesic acetaminophen has been incorporated in quite a few combination products.

Six new tranquilizers made their appearance and the competition in this field is keen. Not all are chemically related, and their mode of action differs to some extent. Some require dosages of 1 mg., others of 300 mg. per tablet. In the absence of exact tests for diagnosis of mental and related disorders it is not an easy task for the physician today to select the right tranquilizer for a given patient. A great deal of basic research is still needed before individualized therapy can be offered.

Many of the firms who have access to modern tranquilizers are combining these with a variety of other agents and using them where phenobarbital would formerly have been employed. There are new combinations with corticoid and estrogenic hormones, with vasodilators, anticholinergics and others. Whether patients in the present climate of opinion regarding the cost of medication will in the long run accept these relatively high priced products remains to be seen.

In the anticholinergic field two interesting new products have been offered: Tral (Abbott) and Darbid (SKF), the latter having an unusually prolonged period of action.

Ayerst offered in Cothera (dimethoxanate HC1). a new synthetic antitussive and in Theruhistin (isothipendryl HC1.) a new antihistamine. Into the crowded sulfonamide market Lederle has brought a significant innovation with Kynex (sulfamethoxypyridazine) of which only one or two tablets of 500 mg. have to be administered daily. Diuril (chlorothiazide), a new non-mercurial diuretic, with a concommitant hypotensive action was marketed by Merck Sharp & Dohme in December. It appears to exert its diuretic effect in a manner different from that of other agents used for this purpose.

In the hormone field, too, progress has been made. Two new progestational agents have been made available: Norlutin (norethindrone-Parke Davis) and Enovid (norethynodrel-Searle). Upjohn de-

(*Continued on page 356*)

New York State Bar Section discusses Federal enforcement, product liability, narcotic control, and certified colors, among other subjects.

Drug and Cosmetic Law

Some of results of expansion in the Food and Drug Administration as the result of increased appropriations in the two years following the 1955 report of the Citizens Advisory Committee were, according to Food and Drugs Commissioner George P. Larrick: a rise in inspections from 16,287 in fiscal 1957 to 20,241 last year; rise in domestic samples collected from 17,675 in fiscal 1956 to 18,831 last year. In the first three months of the current fiscal year inspections totaled 6,015, and samples 5,365. Also, 26 man-years were spent last year on the survey of untoward reactions associated with antibiotic use.

In addition, there was added supervision of new drugs, both in handling of applications more expeditiously and in the surveillance of their results in general medical practice, in comparison with carefully controlled clinical tests.

More basic scientific research was engaged in, including: pharmacological studies on pesticide and chemical additives, nutritional studies on processed foods, bacteriological studies on precooked and frozen foods, improved methods for drugs, studies of new cosmetic ingredients. In addition, more man-hours were devoted to the development and enforcement of food standards.

"Royal jelly, the queen bee's only food, as the answer to premature aging," is the subject of an action brought by the Food and Drug Administration, William W. Goodrich, Assistant General Counsel for Food and Drugs, told the members of the New York State Bar Association Section on Food, Drug, and Cosmetic Law. Other litigation has arisen from the widespread distribution of pega palo, a vine grown in the Dominican Republic, as a sex rejuvenator, and from a repacker of a variety of new drugs for which he holds no effective new drug applications.

In reviewing actions of last year in products liability, William J. Condon, attorney for Swift & Co., spoke on the case of Wright v. Carter Products, Inc. as follows:

"This was an allergy case, tried in the U. S. District Court for the Southern District of N. Y., wherein plaintiff alleged that she suffered a severe contact dermatitis as a result of using a deodorant manufactured by the defendant. The trial court held that Massachusetts law applied; that plaintiff could not

recover if her injury was the result of her own peculiar and unforseeable suseptibility; that a record of only 373 complaints out of 82 million jars of the product sold militated against negligence on the part of the defendant; and, finally, since plaintiff had suffered a rash from a prior use of this same product, her contributory negligence would bar her recovery in any event.

"The Court of Appeals for the Second Circuit agreed with the District Court that Massachusetts law applied; but there the area of agreement ended. Under Massachusetts law, the Court said, the test is forseeability. The District Court should have determined whether it was forseeable by the defendant that harm would come to some persons from the use of its product. The fact that there had been 373 prior complaints bears directly upon this question. If it was forseeable, then the court should consider whether this defendant had a duty to warn those users of that possible injury. In this connection, the court is admonished to consider the defendant's status as an expert in the formulation and use of chemicals for deodorant purposes. This is doubly revelant—first, as bearing on defendant's duty to warn those otherwise unable to protect themselves; and, second, as tending to show defendant's knowledge of the harm that might befall some users of the product. Finally, the Court of Appeals disagreed that the plaintiff's re-use of a product that caused a prior rash was contributory negligence. It suggested that this defense is not available in a case where the negligence of the defendant

consists of a failure to warn. The reasoning is that plaintiff cannot be said to have contributed to her own injury when she had no way of reasonably ascertaining that the danger of injury existed."

U. S. Narcotics Commissioner Harry J. Anslinger, in a paper read for him by Alfred L. Tennyson, Chief Counsel of the Federal Bureau of Narcotics, told the Section that while "the great majority of the states have enacted narcotic control legislation designed to regulate the intrastate traffic in these potentially dangerous drugs, the category of narcotic drugs covered by state laws is not generally coextensive with that covered by the Federal narcotic laws, in so far as the synthetic narcotic drugs are concerned."

"For instance," continued Commissioner Anslinger, "in the narcotic law of the State of New York the term 'Narcotic Drugs' is defined to include, besides the 'natural' narcotics, such synthetic drugs now in general medical use as isonipecaine (Demerol), methadone, Dromoran, and Nisentil, and two synthetics not in general medical use, isomethadon and Ketobemidone. The state law does not cover a rather large number of synthetic narcotic drugs which, although not in general medical use, have been found to have addiction liability similar to morphine and which therefore have been covered under the Federal narcotics laws. It is suggested that a state narcotic law should regulate the intrastate traffic in all those narcotic drugs which presently come within the purview of the Federal narcotic laws and, in addition, should provide a procedure for reasonably prompt application of regulatory control to such new drugs as are found to have comparable addiction liability by a designated state agency after due notice and opportunity for hearing. This would not prevent or retard proper scientific research, such as clinical study, of a new drug for the purpose of evaluating that drug as a medicine. It would insure reasonable restrictions upon the availablity of a new drug if and after that new drug were found to possess a potentially dangerous addiction liability."

By working through an international protocol of the United Nations, and the World Health Organization, said Commissioner Anslinger, since the advent of Demerol, approximately thirty additional synthetic narcotics have been brought under international control since they were considered to be "liable to the same kind of abuse and productive of the same kind of harmful effects" as the drugs already covered under the 1931 Convention, i.e., drugs like morphine. "Only a few of these drugs have been distributed for general medical use as analgesics, especially in the United States," said the Commissioner. "This is because the respective producers have determined that most of the new drugs, while having some degree of analgesic effect, do not show sufficient therapeutic advantages over other pain-relieving drugs already in use to justify further clinical studies looking toward general medical use. Nevertheless, their addiction liability necessitates the application of international controls as a precautionary measure."

The matter of certified colors under the Federal Food, Drug, and Cosmetic Act came in for serious attention from both Mr. Goodrich, FDA Counsel, and S. L. Mayham, executive vice-president of the Toilet Goods Association.

Mr. Mayham contends that the phrase "harmless and suitable for use," which appears three times in the law, means both harmless and suitable, and that these words cannot be separated. This gives the FDA "broad discretionary powers to establish quantitative tolerances for colors," said Mr. Mayham. "Certainly five per cent of a color might be harmless and suitable where thirty per cent of the same color might be both harmful and unsuitable or either. Not so, say the wise attorneys for the government. 'Harmless' means just that, namely, without capability of harm under any conditions, and to hell with the word 'suitable.'

Furthermore, Mr. Mayham contends that the system of having the three classifications of colors, namely F.D.&C. colors, D.&C. colors, and Ext. D.&C. colors, is "completely illegal." Since the FDA is proceeding in the color regulation on the doctrine of "harmless per se", Mr. Mayham says, "It is obvious that the whole certification section of the Act must be reconsidered and revised." He pointed out that the Williams Bill, HR-9153, the Curtis Bill, HR-8945, Mr. Mayham said that he much preferred the provisions of the Williams Bill.

"These measures provide for the certification of 'colors', not merely *coal-tar* colors as is provided in the present law," said Mr. Mayham. They provide that certification of such colors be on the basis of harmlessness in use and not 'harmlessness per se'. They provide for the *separate* listing of colors for foods and for drugs and for cosmetics so that a dye found harmful for one group of products need not be classed as harmful for the others. They would give the Administration authority to both areas of use of such colors, immensely important to the cosmetic industry, and quantity limitations in various products so that percentages of safe use may be established by the Administration. They further provide that the Administration, where the public health is not in-

(*Continued on page 356*)

Aspirin and Buffered Aspirin

BY JOSEPH KALISH, PH.D.

Anyone who cannot completely avoid TV and radio is now aware that commercials for aspirin and aspirin mixtures ("doctor's prescription") are strongly directed against the claims made for buffering. Inevitably this conflict for a $250,000,000 market would get an airing in the professional medical literature and "The New England Journal of Medicine" obliges with two articles in the January 30, 1958 issue, backed up by an editorial. These papers are devoted to the thesis that buffered aspirin is not a better or faster analgesic than unmodified aspirin, and that side reactions, including gastro-intestinal disturbances, and salicylate blood levels are the same for both proprietaries. The author of one of the papers, Dr. Robert C. Batterman, in a study published in the "Journal of the American Medical Association" for December 24, 1955, at that time expressed scepticism of the clinical investigation methods he used then, but also uses them now. His own words point up the weaknesses in the current reports and it is possible to conclude that the thesis has not been proved. The individual user must still decide for himself whether or not aspirin causes gastric upset which is avoided by the buffered product, and whether or not buffering makes a faster-acting preparation.

The paper by Robert C. Batterman (*N. E. Journ. Med.* 258:213, 1958) is summarized by the author as follows: "A total of 160 patients were studied under several different clinical investigational conditions. The effects of a single dose, daily dose, short-term and long-term therapies were compared for unbuffered and buffered acetylsalicylic acid under conditions of double-blind technique supplemented by crossover observations. In none of the four types of comparisons used was it possible to distinguish between the medications for analgesic effectiveness or gastrointestinal tolerance.

"The times required for analgesia, the degrees of analgesia and the frequency of gastrointestinal intolerance were identical for both preparations. A similar study utilizing the single-blind method produced the same conclusions.

"Although sodium bicarbonate might delay the absorption of salicylate, the buffering antacids exemplified by aluminum compounds do not alter the rapidity of absorption of salicylate from the gastrointestinal tract of man.

"It is therefore concluded that these antacids serve no useful purpose as constituents of the tablets studied and that inclusion of them with acetylsalicylic acid offers no advantage over aspirin alone."

These conclusions arose from studies with patients treated for the relief of arthritic and other pain. Using a double blind technique, in which neither patient nor physician knew which preparation was being administered, and giving the preparations on a random basis, 76 patients with arthritic pain were treated with either buffered or unbuffered aspirin. After a single dose (two tablets) of aspirin, of 57 subjects, 21, or 37.0 per cent, reported satisfactory analgesia and 9, or 16.0 per cent, reported untoward G.I. reactions. With the buffered preparation, 25 of 59, or 39 per cent, reported satisfactory analgesia while 12, or 20.3 per cent, reported untoward reactions. After one week of dosing with 2 tablets four times a day, 54.4 per cent reported satisfactory analgesia with aspirin and 54.2 per cent with the buffered aspirin; reactions were 29.8 and 27.1 per cent, respectively. At the end of three weeks, satisfactory analgesia was reported by 55.3 per cent on aspirin and 53.7 per cent on the buffered product with reactions at the rate of 36.0 and 37.0 per cent. At the end of three weeks, 10 patients had dropped out of the aspirin series and five out of the group on buffered aspirin.

The same tablets, with or without buffers, were administered at random by the double-blind procedure to 56 hospitalized patients with a wide variety of medical and surgical conditions, the dosage being two tablets every four hours for four doses. Satisfactory analgesia occurred in 66 per cent of those taking aspirin, with 8.9 per cent of gastrointestinal intolerance, while with the buffered aspirin, relief of pain was reported in 61.8 per cent of cases with side reactions in 10 per cent. The different types of pain in arthritic and non-arthritic situations may account for the higher rate of relief in the latter series and for lower side-reactions even with heavier doses.

The second paper is by Dr. G. A. Cronk (*N. E. Journ. Med.* 258:219, 1958) and the investigation was supported by a grant-in-aid from Winthrop Lab-

oratories, Inc.; the summary and conclusions are:

"In a double-blind study 667 doses of nonbuffered acetylsalicylic acid (0.6 gm.) and 757 doses (0.6 gm.) of buffered acetylsalicylic acid were administered to patients hospitalized with painful conditions.

"No statistical difference was demonstrated between the two agents studied in the time required for relief of pain, the duration of the relief or the degree of relief. Approximately 30 per cent of both groups failed to experience relief of discomfort. Gastrointestinal symptoms followed the administration of buffered acetylsalicylic acid in 3 patients (0.4 per cent) and the administration of nonbuffered acetylsalicylic acid in 5 patients (0.7 per cent). In all 8 of these patients buffered and nonbuffered acetylsalicylic acid was administered on subsequent occasions without the occurrence of gastrointestinal symptoms, suggesting that the underlying disease affected the production of these symptoms."

The patients in this study were university students of both sexes between the ages of 17 and 43 admitted to the infirmary with a variety of painful clinical conditions. All patients admitted during a given 24 hour period were treated with the same medication, which was a 0.6 gm. dose, repeated when necessary. Two groups of medication were buffered aspirin, two were unbuffered and identity was not revealed until the project was completed. The reaction of patients to 677 doses of the unbuffered preparation and to 757 doses of the buffered were observed. "Grossly and statistically, there was essentially no difference between the buffered and nonbuffered drug in the time required for relief of pain." For both preparations, pain was relieved in 20 minutes in 10 to 20 per cent of the cases, in 30 minutes in 50 to 60 per cent of the cases and in approximately 70 per cent in 60 minutes, with no increase of relief thereafter. The duration of relief from discomfort was reported to be essentially the same for both products. No tabulation was given for these data; from the reproduced chart it can be estimated that the reported duration of relief was 2 hours in 75 and 73 per cent of the population using buffered aspirin and 64 and 65 per cent in those using the unbuffered product. The corresponding figures for 3 hours duration of relief were 65 and 68 per cent for buffered and 60 and 56 per cent for unbuffered aspirin.

Gastrointestinal symptoms developing after medication were considered as distinct from the primary clinical condition and listed as side reactions. These were very low, 0.7 per cent for unbuffered and 0.4 per cent for the buffered aspirin.

The first paper thus shows 16.0 and 20.3 per cent of subjects in the arthritic pain series to encounter untoward gastrointestinal reactions after a single 0.6 gm. dose of either buffered or unbuffered aspirin, with the reaction rate increasing on further administration of the drugs. In the general pain series the frequency of gastrointestinal intolerance was 8.9 and 10 per cent. These are to be compared with the reaction rates of 0.4 and 0.7 per cent reported in the second paper. The differences are large enough to permit the entering wedge of doubt as to the over-all validity of these studies.

The Batterman 1955 paper, reporting a study of the comparative analgesic activity of salicylamide, aspirin and placebos, concluded that the double blindfold technic as applied to the evaluation of analgesic and antirheumatic drugs in ambulatory patients does not show any differentiation between placebo therapy or effective medicaments. It should not be surprising, then, that this same technique would not distinguish, for either Dr. Batterman or Dr. Cronk, between two rather closely related, effective medicaments. Dr. Batterman noted untoward reactions, primarily gastrointestinal disturbances, in approximately 25 per cent of his arthritic patients, while about 60 per cent obtained satisfactory analgesia from aspirin, from salicylamide or from a placebo. For patients with general pain, the technique showed relief in approximately 60 per cent of the patients using aspirin, in 47 per cent using the placebo, and in 27 per cent treated with salicylamide. Furthermore, in this earlier paper, Dr. Batterman gives a certain amount of credence to experience as contrasted with statistical studies and this might well be considered in evaluating the activity of buffered aspirin. He states, "Thus, aspirin, if studied under such a regimen, would be rejected because the same response was achieved with placebo medication. Since this is contrary to the universal experience with salicylates, we seriously questioned the validity of the double blindfold technique for the evaluation of such drugs." At this point I might add my own observation concerning the testing of analgesic activity and speed of analgesic response. There is an "uncertainty principle" in operation here where

(*Continued on page 366*)

The Perfumer's Vocabulary

BY J. R. ELLIOTT
PERFUME-FLAVOR CONSULTANT

Perfumery has acquired a specialized vocabulary covering the various situations and effects peculiar to the creation and evaluation of the fragrances. Although most of the words used are familiar, they often have a special, exclusive meaning when applied to fragrances. Therefore, the following glossary of the principal terms of perfumery has been prepared.

Acid—A pungent odor, usually with a "metallic" reaction in the back of the nose. Acidity is partially associated with the sense of taste, as the metallic reaction noted arises in an area close to the taste buds. The acid note often appears when there has been an excessive use of the aliphatic aldehydes in the presence of esters. Citral and aldehyde C-9 are frequently offenders in this respect.

Animal—A typically "body" odor, repulsive yet attractive. Civet, Tonquin musk, and castoreum are natural isolates of animal origin, which classically demonstrate this odor quality. None of these materials alone is attractive to the layman's sense of smell. Yet they all play highly important parts in the development of attractive fragrance compositions. Among the essential oils of vegetable origin, ambrette-seed oil displays a musk-like animal character. Among the synthetics indole, skatole and tetra-hydro-para-methyl-quinoleine demonstrate effects comparable to civet. To a lesser degree this also applies to phenylacetic acid and its methyl ester. The benzoic esters (methyl in particular) and the ethers and esters of para-cresol also have some measure of the animal characteristic.

Balance—A fragrance whose components have been so carefully blended together that no one aromatic body or effect is readily identifiable is said to be "in balance".

Balsamic—A quality best described as the combined sweetness and woodiness associated with fresh-cut, well-seasoned, nonconiferous wood, as for example maple. Among the essential oils, balsam of Tolu or balsam of Peru illustrate this quality. Penylethyl cinnamate is an aromatic chemical having balsamic characteristics. The balsam effect is most frequently encountered in the Oriental fragrances.

Bitter—An effect described as a metallic "greeness" completely devoid of any sweetness. This effect is difficult to describe, but it can be vividly demonstrated by an examination of oil of galbanum.

Body—The opposite of "thin". Body in perfumery is analogous to a symphony orchestra playing with the full complement of instruments. The expression, "This fragrance is too thin; it needs to be bodied," often used in the perfume trade implies that aromatic materials such as one or more of the essential floral oils should be added to produce additional overtones and color. Unfortunately, this is a rather costly procedure.

Camphoraceous—An odor resembling camphor to some degree. The essential oil spike lavender is a good example of a common aromatic material with a camphoraceous note. Among the synthetic chemicals the material "C-64" (Dow Chemical Company) has a distinctly camphoraceous note but with interesting nuances reminiscent of patchouli oil.

Chemical—An adjective used to describe either a complex fragrance or a single aromatic product which has an odor that cannot be utilized. Commercial toluol is such a product, for it has a strong odor which is certainly neither attractive nor, on the other hand, repulsive like indole. Nevertheless, toluol simply fits nowhere in the fragrance category of useful perfumery. A fragrance oil compounded with too few aromatic materials held in improper balance often possesses an odor that can be best described as "chemical".

Cloying—A word usually used to describe excessive sweetness in a fragrance. Excessive use of vanillin in a composition is a common cause of cloying. Cloying also describes a surfeiting of an odor effect, as illustrated by the chemical isoeugenol. The sweet carnation-like effect of isoeugenol is so intense that it must be contrasted with its isomer eugenol in order to obtain a satisfactory reproduction of the carnation note.

COURTESY SEVENTEEN MAG.

Cologne—A term derived from the French name of the German city Cologne where this product was allegedly first popularized. Originally, it was the condensate from the steam distillation of a water-alcohol infusion of citrus peels (bergamot, lemon, orange), herb leaves (rosemary, thyme, lavender), and flower petals (rose, orange blossom). With the modern advent of a wide selection of other essential oils and synthetics, this cologne was considerably altered.

Today, cologne is usually a diluted version of an extract, using aqueous alcohol (60 to 80 per cent by volume strength) as its solvent, and from one to six ounces of fragrance oil per gallon of finished product. A less expensive fragrance oil is used for a cologne than for an extract. Usually it contains a substantial amount of citrus bonquet to simulate the lightness" and "lift" of the original cologne type. Shaving lotions are technically considered to be in the cologne category, but they usually have a lower fragrance oil content (one to two ounces per gallon) since their fragrance is incidental to their therapeutic properties.

Toilet waters and Floral waters are usually colognes with higher than usual concentrations of fragrance oils. Sometimes as many as twelve ounces of fragrance oil are used per gallon of finished product. A comparatively recent development is the "solid" or "stick" cologne, which is basically alcohol solidified with soap and including emollient materials. The physical principle involved is a gel formation similar to that used in the manufacture of the canned heat packages.

Cologne oil—A special fragrance oil is designed for cologne production, which is a less expensive version of the costly fragrance oil used in the extract with which it is associated. The explanation for the price differential between the oils is that colognes are sold at prices disproportionate to the cost of the extract. Many perfumers try to make their cologne oils much lighter versions of the fragrance oil used in the extract, by introducing citrus oils. This kind of modification is a "must" with heavy Oriental fragrances which become lifeless when made into colognes without some "lightening" agent.

Composition—another word for fragrance oil preferred by Europeans because it is more descriptive of the artistry involved in the creation of a fragrance oil, and more dignified than the chemical synonym of "formula".

Depth—A fragrance quality achieved by the incor-

(*Continued on page 367*)

Latin-American Drug Laws*

BY VICTOR C. FOLSOM

FOREIGN COUNSEL OF STERLING DRUG, INC. AND VICE-PRESIDENT OF STERLING PRODUCTS INTERNATIONAL INCORPORATED

I find that I am stepping into a controversy regarding the state of Latin American drug laws and what is apparently considered the need for uniformity. I believe it was Lincoln who said that a problem is half solved when one discovers exactly what it is. Some of the statements which have been made about Latin American drug laws indicate a lack of understanding of basic facts.

Within certain limits, uniformity in law in general would be a good thing for the world. Since the drug laws directly affect the health of the world, it is important that they be as uniform as possible. However, the fact that this objective is desirable does not make it easy of attainment. Even in our own 48 states we do not have the degree of uniformity which one might expect.

A common misconception which seems to exist in this country is that the drug laws of Latin America are a mystery and that they cannot be found. The most apparent reason for this is that the laws are in a different language, and few of the laws and regulations have been published in English. As a "sometimes" Latin American, I object to the implied criticism that Latin American countries should publish their laws in English rather than in Spanish, Portuguese, or French. On many occasions I have tried to find United States law to submit as proof of foreign law in courts in Latin America, and I have yet to see it published in anything but English.

Our Department of Commerce does publish in English the pharmaceutical regulations of the countries of Latin America.[1] Each report cites the various laws and regulations upon which it is based. It is sometimes difficult to secure copies of the actual basic laws because many of them are out of print, but they can be obtained with the same amount of effort it takes to find most laws in civil law countries.

I do not find the drug laws of Latin America too difficult to locate, nor do I find them too complex to understand. They are fairly modern and up to date, and a surprising amount of uniformity is found in them, considering that 20 different countries are involved.

From the outside things look a little difficult, while those on the inside of the maze find the situation completely normal. Personally I have much more difficulty reading and interpreting some of our federal and state laws than I do in reading the relatively direct language of the Latin American drug regulations.

The system of registration of drug products in Latin America may be described as a "positive" system of licensing, while that prevailing in our country is frequently described as a "negative" type of control. With the more rigid enforcement of the new drug provisions of our Federal Law, the two systems may be converging, with our system adopting more of the civil law system than vice versa. As in the case of most types of law, there is much that each could profitably borrow from the other. We feel that our system is best, but I can assure you that there are Latin American health department officials who are somewhat shocked to learn that there is no official agency in our country which tests and licenses all medicinals to be sold to the public.

In our office we attempt to keep up to date the essential pharmaceutical laws and regulations of each of the Latin American countries in chart form. We maintain three charts; the first gives us, at a glance, board of health registration or licensing procedures for both foreign and locally manufactured products; the second, labeling specifications; and the third, authorization requirements for local manufacture. In addition, we compile trademark licensing laws and

*Before Section on Food, Drug and Cosmetic Law of New York State Bar Association, January 29, 1958.

regulations. These charts enable us to compare the requirements of one Latin American country with those of another and prepare uniform documentation and labeling for certain groups of countries. Before everyone starts ordering a set of these charts, I should hasten to add that they are not available at any given moment because they are constantly being changed. In fact, they change so fast that we have considered writing them in a sandbox containing quicksand. Seriously, the task of keeping this information current is one that requires constant vigilance by someone in each country.

Since the basic purpose of, and approach to, pharmaceutical regulation is the same in the various countries of Latin America, it is not surprising to find substantial uniformity in the essential provisions of the laws and regulations. For example, standard documentation may be prepared for the registration of imported products with the boards of health. Some of it will prove to be surplusage in some countries but will not be objectionable. The two basic documents which constitute the application for registration are:

1) A certificate setting forth the form and description of the product; quantitative, qualitative, and structural formulae; pharmacological action of the product and its ingredients; indications; dosage; mode of administration; manufacturing process; assay and titration; and the name and address of the responsible pharmacist and the manufacturing laboratory.

2) A U.S. board of health certificate for free sale.

They must be accompanied by professional literature, samples, and in some cases laboratory affidavits.

A power of attorney authorizing the presentation of the documents must be on file with the board of health. The product is then analyzed by the board and in some countries its efficaciousness[2] is passed upon by a board of medical experts. Approval is by no means a routine matter. If it passes all tests, its sale is licensed. The term of the license granted varies from one to ten years, although in half of the countries the license is theoretically permanent.

The labeling requirements of the various Latin American countries are for the most part sufficiently uniform to permit the use of only one label for most countries. A label showing the following would meet the requirements of most Latin American countries: name and quantity of product, proper pharmaceutical dosage form, name of producing establishment and its location, formula, indications (general pharmacological properties only), and the dosage if it is a proprietary product. In addition, in small print, at the bottom or on the side of the label, the requirements that are peculiar to a particular country should be added following the name of that country, such as the registration statement required by all countries, the name of the responsible pharmacist, the name and address of the importer, the trademark registration number, the expiration date where applicable to the product, the sale price, etc. Admittedly it is not always easy to get all this information on one of the small labels we use in Latin America where the retail unit is sometimes literally two or three tables. An expert Japanese "miniscribe" is sometimes a handy fellow to have in your label department.

In certain fields, such as advertising, the laws affecting pharmaceutical products do vary substantially from country to country. Some few of them rigidly censor advertising copy and no copy may be used unless it has the approval of the authorities. All kinds of advertising are checked for inaccuracies, deceptions, exaggerations, and the like. Other countries exercise the same type of control maintained in the United States.

Some of these requirements probably sound stringent. Perhaps a bit of history would help to place in perspective the different approaches which the civil and common law take to this field of law. As you know, the laws of Latin America have their ancient sources in Rome and their more immediate ones in Spain and France. You will be relieved to hear that I will not take you back to Justinian's Codex. However, I did examine some relatively recent Spanish and French history. The Spanish Ordinances of Pharmacy of 18 April 1860[3] regulated the sale of medicinals in a rather enlightened manner. One interesting sidelight is that the lawmakers of that early date were concerned with the problem of substitution in drugstores. The law prohibited substitution and provided both fines and imprisonment as a penalty therefor.

The institution of the "responsable" (or responsible pharmacist), which seems to give many of our North American drug companies difficulty, is not a recent invention but is centuries old, and his existence was surely justified in his day. His function is, of course, to certify that the pill which the doctor prescribes contains what the doctor thinks it contains. As in everything, there have been abuses of this institution, but this is not the fault of the law. It may console those of you who have recently dealt with the regulations of Cuba regarding the "responsable" to know that the Spanish law of 1860 specifically provided that a pharmacist could not own or manage more than one establishment.

The civil law, over a long period of time, seems to have confined both the manufacture and sale of drugs to pharmacists. The Spanish law made a distinction between what we call ethicals and proprietaries, although the two terms were not known at that time. A few household remedies could be sold in non-drug outlets, but the rules were strict. For example, no one other than a pharmacist was allowed to sell natural mineral water or to manufacture artificial mineral water. All in all, the law indicates that even in those days the pharmacists knew their way around the halls of the lawmakers. On the other hand, the in-

(Continued on page 387)

Geranium Bourbon

BY STEFFEN ARCTANDER
PERFUMER, COLGATE-PALMOLIVE CO.

A young branch of Geranium, 6-8 weeks after cutting. Reunion.

Very correctly, the name Geranium oil was changed to pelargonium oil some 10 years ago in a number of pharmacopoeias and other "official" reference books. But perfumers are generally conservative, and the name geranium seems to be immortal. However, to avoid future confusion, let it be said, that the only true geranium oil is a scarce and little known perfume oil from Bulgaria, Yugoslavia, Cyprus and nearby areas: The so-called "zdravetz" oil from geranium macrorrhizum.

As is so often the case with perfume plants, the original habitat of geranium does not enjoy the profit of being the top producer of the essential oil. It is generally believed, that all pelargonium species derive from South Africa, which seems to be the only place in the world, where these plants have grown wild. Out of a huge number of varieties, a few reached Europe about 1700, but were not exploited for their fragrance in France until about 1800, when the first plantations in the South of France were established. It had been known since long, that the plant would suffer heavily or even die at the low winter temperatures in the open country in Europe. In the Grasse region, the plant is thus only an annual, and must be replanted every year.

When Algeria was conquered in 1830, French settlers were immediately interested in cultivation of such delicate plants in the new country. But it was not until late in the 19th century, that the geranium from the South of France was introduced in Reunion island in the Indian Ocean. The geranium oils from various parts of Africa will be described in a later article.

Through friends in France, I had received information and introductory letters for my visit in Reunion. So, when arriving after a rough-sea, 35-hour ocean-liner trip from Tamatave on the East Coast of Madagascar, I found myself immediately among friends. And they made my week in Reunion a wonderful one.

From the port on the northwestern corner of the island, (the only seaport in Reunion), I took the flaming-red diesel-train to Saint-Denis, the capital, and headquarters for my next excursions. Reunion is about 1,000 square miles, situated near the Tropic of Capricorn, 500 miles east of Madagascar, in the luminous-blue Indian Ocean. The volcanic interior of the island raises to a snow-capped peak of 10,250 feet, while the coastal strip enjoys a tropical climate with the conveniences of an island climate. The monsoons carry a heavy rainfall upon the island, but this is just suitable for geranium, vetiver and vanilla, and for cane sugar, which is the most important agricultural product of Reunion. Geranium oil amounts to some 10 per cent of the island's export values. However, it is worthwhile mentioning, that geranium oil is the only product from Reunion which is capable of competing with, or even threatening any similar

product from other parts of the world. Reunion is still the world's geranium oil producer "par excellence" —and also in regard to quantity.

During the whole stay in Reunion, I enjoyed the definite advantage of being able to use the French language overall. Even the Chinese and Indian settlers, tradesmen and storekeepers spoke this language in addition to their own. There is no aboriginal language in Reunion, unless we consider French so. Most of the settlers, who grow geranium and vetiver, are French descendants from very early days of colonization. Reunion is inhabited by all shades of people, from white to black, from the Negroid to the Indian type, from Chinese to Creoles. But even among the French population there seems to be a vast gap in the level of living—from the hard-working share-croppers, who do not even own the land which they cultivate, to the wealthy stockholders in the sugar industry. The geranium growers live at their fields in the high plateaus of the Southwest, where these small plants almost present the only possible cultivation. On the other hand, it must be remembered that geranium takes up a lot of space compared to the yield of oil, although this seems to

Reunion. Geranium field at Tampon. Monsieur Henri Le Merle, owner of the field. Monsieur et Madame Isautier from the Barbot essential oil house.

be higher in Reunion than anywhere else. Coffee, tobacco and cocoa plantings have declined considerably during the past years.

I was fortunate enough to be shown through some of the finest geranium fields in Reunion, and with Monsieur Isautier from the well-known Barbot house at the wheel, we drove along the fine roads through the small Ylang-Ylang area down to the geranium fields near Saint-Louis and Saint-Pierre. In the Tampon area, from where some of the finest Bourbon geranium oils derive, we visited the extensive fields, belonging to Monsieur Henri le Merle, who also grew vetiver grass. To be correct, I studied vetiver around Mont-Vert, and geranium in the Tampon district, but the cultivation area of these two plants overlaps—with many small-scale groves of both in the same area. Geraniums will, however, grow at higher altitude—up to 4500 feet—than vetiver.

Almost 50 per cent of the Bourbon geranium oils come from the Tampon district. The plant grows in altitudes of from 1,200 feet to 4,500 feet, where the steep slopes in the hilly, mountainous regions are not apt for growing sugar cane. Roads, necessary for the transportation of harvested sugar canes, are not present in these regions, but the geranium can be distilled almost on the spot, thus eliminating a transport problem. There are several hundred small stills for geranium, often only capable of treating some 500 lbs. of plant material at the time, and with a yield of around 0.1 per cent of oil from the plant material, the daily production may run into a few lbs. at the most. The length of time of distillation is somewhat dependent upon the heat under the boiler. Fuel is scarce; wood is the one generally used. One charge of distillation will require about 3 to 4 hours, of which at least 1½ hours are actual distillation of oil/water mixture.

The fact, that geranium oil is produced in so many small lots, also has its advantages. The lots, when bulked, form an average grade of geranium oil, which is easier reproduced than an unbulked oil from one distillery would be. Even annual changes are partly eliminated this way. Besides, no single distiller is able to supply a few drums of geranium oil from his own still. If he produces such quantities at all, he will have long since sold the production to some middleman, usually a Chinese, or probably to the land owner, in case the distiller is not one himself.

But even when passing through two, three, four or more hands, the geranium oil is rarely cut or adulterated. Those, who can afford not to sell the oil immediately, may use the oil for speculation, and he may wait several months for an opportunity to get

(*Continued on page 389*)

Flowering branch of Geranium Bourbon, December. Tampon area.

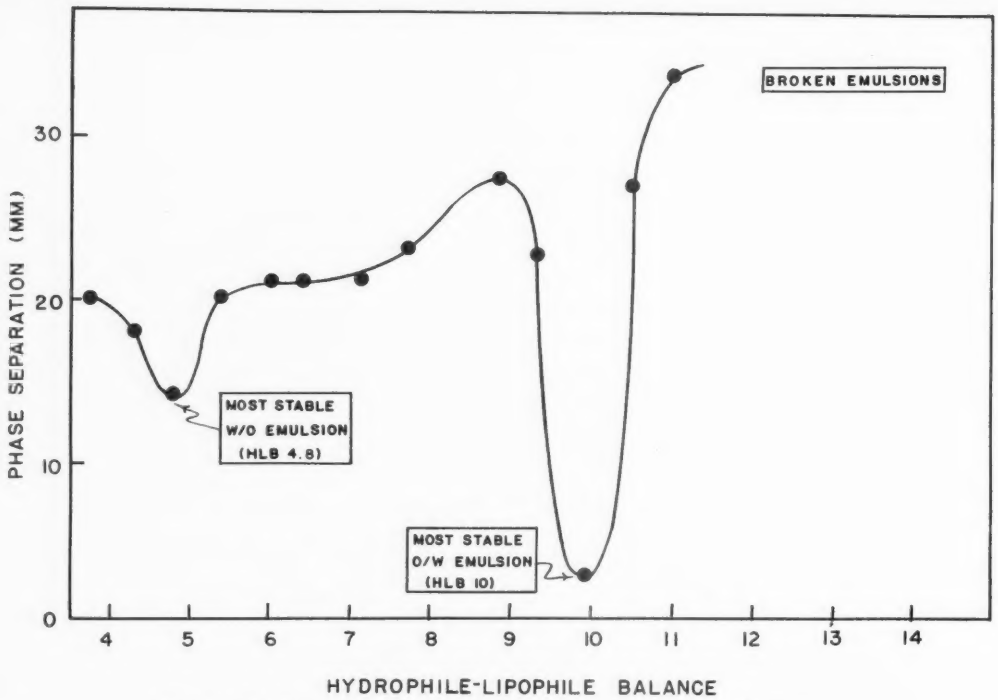


Fig. 3.—The influence of HLB on the relative stability of w/o and o/w emulsions.

The Hydrophile-Lipophile

BY A. H. C. CHUN, R. S. JOSLIN and A. N. MARTIN

The results of several series of emulsions using different surfactants in combination with the natural emulsifiers are shown in Table I. The summary of the results of Table I with the average HLB values, the ranges, the standard deviations, and the 95 per cent confidence intervals on the average HLB values are shown in Table II.

TABLE I.—DETERMINATION OF THE HLB VALUES FOR SOME EMULSIFYING AGENTS

Emulsifier	Surfactants				
	Span 20	Span 40	Span 80	Tween 20	Tween 80
Acacia, U.S.P.				7.5	8.6
				7.5	8.3
				7.5	8.6
	<10.5	<10.5	<10.5	9.4	10.1
Gelatin (Pharmagel B)		<10.5	<10.5	9.6	10.1
				9.6	10.2
Methylcellulose	10.6	13.0	13.4	10.3	10.4
(Methocel, 15 cps)	10.5				
	13.4		13.7	>10.5	>10.5
	12.9		13.5		
Tragacanth, U.S.P.	12.6		13.1		
	13.5		13.1		

HLB of acacia. Tween 20 and Tween 80 were used in the determination of the HLB value of acacia. The total emulsifier concentration was gradually increased to 3 per cent, since this was found to be the optimum concentration for the evaluation by the phase separation method used in this investigation. Six series of emulsions were prepared, and the average HLB value for acacia was found to be 8.0. The values determined by the use of Tween 80 were slightly higher than those obtained by the use of Tween 20.

TABLE II—SUMMARY OF RESULTS

Emulsifier	Average HLB	Range of HLB Values	Standard Deviation	95% Confidence Interval on the HLB
Acacia, U.S.P.	8.0	1.1	0.3	7.7- 8.3
Gelatin (Pharmagel B.)	9.8	0.8	0.3	9.5-10.1
Methylcellulose (Methocel, 15 cps)*	10.5	0.3	0.1	10.3-10.7
Tragacanth, U.S.P.	13.2	1.3	0.4	12.8-13.6

*Data of Span 40 and Span 80 emulsions were eliminated because of erratic results.

HLB of methylcellulose. In the determination of the HLB methylcellulose (Methocel, 15 cps) the results obtained with Span 40 and Span 80 were inconsistent compared to the results using other surfactants. The reason for this variation was not investigated. When the results for the Span 40 and Span 80 emulsions were omitted the pooled HLB value for methylcellulose was 10.5. It was found that

methylcellulose alone produced stable o/w mineral oil emulsions, which further indicated that its HLB value was in this range.

HLB of gelatin. Tween 20 and Tween 80 were used in the determination of the HLB of gelatin. In order to obtain a uniform dispersion of the gelatin an aqueous solution of this agent was introduced into the mixture after all the components of the emulsion were added. A high concentration of gelatin formed a gel; therefore, a stock solution of 15 mg. per ml. in water was used. As in the case of acacia the HLB values of gelatin obtained with Tween 80 were slightly higher than those obtained with Tween 20. Six determinations were made, and the average HLB value of gelatin was found to be 9.8.

HLB of tragacanth. Eight series of emulsions containing tragacanth and Spans were prepared for determining the average HLB of tragacanth. The value was found to be 13.2.

It has been reported that tragacanth consists of two portions, tragacanthin and bassorin. Tragacanthin dissolves in water forming a colloidal hydrosol while the bassorin swells in water to form a gel[7]. Therefore, an aqueous dispersion of tragacanth was prepared and was allowed to separate into two portions during a period of several days. The top portion, which was assumed to be tragacanthin since it formed a clear layer, and the more viscous bottom portion, which was believed to consist of bassorin, were separately combined with Spans, and a series of emulsions were prepared using these mixtures.

The series utilizing the top portion of the aqueous dispersion of tragacanth produced good emulsions, whereas the bottom portion produced viscous and coarse emulsions which were difficult to evaluate. It appeared from these tests that the top part of the dispersion (tragacanthin) was the emulsifying portion of the tragacanth while the bottom part (bassorin) contributed mainly to the viscosity effect. Further investigation regarding this interesting phenomena should be undertaken.

HLB versus "antagonism." Several combinations of surfactants were prepared to illustrate the w/o and o/w emulsions were formed at rather definite HLB values of the emulsifier combination. Mineral oil emulsions were prepared with mixtures of Tween 80 and Arlacel C[10]. Upon evaluation of the emulsions it was found that two minima occurred in the separation, suggesting points of maximum stability, over the HLB range of 3.7 to 15. This is illustrated graphically in Figure 3. The first minimum appeared at an HLB of 4.8 and the second at about 10, which compared favorably with the required HLB values for stable mineral oil w/o and o/w emulsions respectively as reported by Griffin[3].

The change from w/o to o/w emulsions in the series was not abrupt; rather it was a gradual inversion over the HLB range of about 5.5 to 9, depending upon the relative concentrations of the hydrophilic and lipophilic agents. This result tends to refute the older idea that lipophilic (or w/o) and hydrophilic (or o/w) emulsifiers, when used together, are "antagonistic" since they form emulsions of opposite types. Certain emulsifier combinations may be antagonistic in the sense that they result in physicial or chemical incompatibilities; however, the idea of the antagonism of "opposite-type" emulsifiers

(*Continued on page 393*)

Balance of Gums* CONCLUSION

Fig. 4. — The principle of mixed emulsifying agents. The HLB values for the mineral oil emulsions from left to right in the figure are

Tween 20 emulsion	16.7	Tragacanth emulsion	13.2
Acacia-Tween 20 emulsion	10.5	Span 80 emulsion	4.3
Acacia emulsion	8.0	Tragacanth-Span 80 emulsion	10.5
Tragacanth-acacia emulsion	10.5	Tween 20-Span 80 emulsion	10.5

The products wth an HLB of 70.5 are stable o/w emulsions. The Span 80 product with an HLB of 4.3 is a stable w/o emulsion.

Modern Toothpaste Manufacture

BY MARVIN COOK, CONSULTING CHEMIST

Toothpastes which are extruded from collapsible metal tubes comprise essentially a carefully balanced mixture of polishing agents and liquid carriers which produce a characteristic physical state. Certain properties such as homogeneity, extrudability and storage stability are mandatory in the development and manufacture of quality dentifrices. Toothpaste manufacture is far more difficult than that of most cosmetics since so many variables govern success or failure. Even slight changes in the formula or substitution of ingredients from different sources can sometimes produce serious defects in body, flavor, color and overall stability which unfortunately are revealed only after protracted storage.

Toothpaste manufacture is unquestionably big business; recent estimates place this industry in the $160,000,000 a year category. The widespread use of dentifrices as an adjunct to oral hygiene reflects the awareness of dental health that has been developed by consistent, large-scale advertising. From the early 1930's to the early 1940's, the tone of advertising was intrinsically cosmetic, exemplified by slogans such as "For the Smile of Beauty, Use. . . ." Brand loyalty was enjoyed by certain leading producers; sales and manufacturing procedures remained happily constant with time-proven methods.

After the close of World War II, the American public was virtually deluged by a bewildering succession of claims and counter claims for the therapeutic value of new dentifrices designed not only to clean the teeth but to prevent or minimize dental caries. Brand loyalty evaporated and the latest "exclusive" therapeutic miracle held a brief lead until another scientific marvel came to light.

It is generally accepted by competent authorities that dental caries is ascribable to lactic and pyruvic acid, formed by enzymes acting on fermentable sugar residues found in the mouth. The glycolytic enzymes probably originate from microorganisms found in the plaque layer and many investigators agree that the carious process is bacterial. Considerable efforts have been expended to minimize caries either by destruction of the causative organisms or by interference with their metabolic processes (enzyme inhibition). Another approach is to strengthen the teeth by chemical means so as to produce a barrier against acid erosion.

The acidic products of carbohydrate degradation would seem of great significance in causing enamel demineralization and many compounds which might inhibit acid production have been evaluated. Since acid production is enzymatic in nature, enzyme rather than bacterial inhibition is most frequently attempted. Among the compounds which have been used as inhibitors of tooth decay are:

A. Sodium fluoride
B. Chlorophyl
C. Sodium N-lauroyl sarcosinate
D. Antimetabolites
E. Antibiotics
F. Ammonium salts and urea compounds

A. Sodium Fluoride: Since enolase, one of the enzymes of the glycolytic cycle is highly sensitive to fluoride, it has been suggested that this is the basis for caries reduction, after exposure to fluoridated drinking water. Another concept which has gained wider acceptance is that fluorides combine with tooth enamel and so reduce its solubility in acid. Stannous fluoride has been reported as superior to sodium fluoride but the published data are too limited or inconclusive. A recent innovation in tooth hardeners is the use of sodium oxalate. It is known that certain foods contain oxalates (rhubarb and spinach) which form a film on the teeth. This film is supposed to harden the outer layers of the tooth, making the enamel resistant to acid erosion and decay.

B. Chlorophyl: Metallic chlorophyllins (sodium copper chlorophyllins) were reported as efficacious in oral deodorization and in inhibiting lactobacilli. Other than the fact that the product serves as a distinctive coloring for toothpaste, it has fallen into relative disuse as a dentifrice ingredient.

C. Sodium N-Lauroyl Sarcosinate: This compound heads a group of inhibitors or anti-enzymes which apparently function by interfering with enzymatic degradation of carbohydrates, preventing acid formation on the tooth surface. For an inhibitor to be effective, it must be retained in the mouth at points of potential acid production for some time. Plaque penetration or absorption is a quality which the inhibitor should possess. Of the many compounds

*From a forthcoming book by Joseph Kalish and Marvin K. Cook.

evaluated, sodium N-lauroyl sarcosinate and sodium dehydroacetate were found most effective in this application. Evidence as to their value in caries prevention is still inconclusive.

D. Antimetabolites: Microorganisms require essential growth substances (vitamins); it is possible to "fool" the organisms with substitute compounds which are in small part similar to the essential substance. In attempting to utilize the substitute compound metabolism is affected, usually adversely. Pyridine-3-sulfonic acid which is related to nicotinamide, is apparently capable of reducing oral acid production in this manner.

E. Antibiotics: Penicillin, tetracycline and tyrothricin serve to block acid formation but their use in a toothpaste may result in the development of resistant pathogenic strains.

F. Ammoniated Salts and Urea Compounds: It has been proposed that ammonium salts and urea are useful in inhibiting acid production. There is some evidence that oral lactobacilli diminish in the presence of dibasic ammonium phosphate. Combinations of urea and dibasic ammonium phosphate are generally marketed as "ammoniated" dentifrices. There is a mass of affirmative and negative findings as regards these mixtures. In the absence of exhaustive clinical and other data, it is difficult to judge their effectiveness.

The ingredients commonly used in a conventional toothpaste formula of the soft modern type may be classified as follows:

A. Polishing agents (abrasives)
B. Stabilizers
C. Humectants
D. Sweeteners
E. Foaming agents
F. Flavors
G. Preservatives
H. Water

A. Polishing Agents: There are many abrasives which are useful in the manufacture of toothpaste. These would include dicalcium phosphate, calcium carbonate, tricalcium phosphate, magnesium hydroxide, calcium sulfate and diammonium phosphate. Dicalcium phosphate, hydrated ($CaHPO_4 \cdot 2H_2O$) is a white, tasteless crystalline material which is practically insoluble in water. It is also known as dicalcium phospnate dihydrate and is widely used in toothpaste formulations because of its physical properties. Special stabilized grades are offered by manufacturers, primarily for dentifrice formulation. They generally are finely milled, air floated products, 99.5 per cent of which pass through a 325 mesh screen. Dicalcium phosphate dihydrate does, however, possess a tendency to lose its water of hydration during storage and hardening of the tube contents must be guarded against by proper formulation and manufacture. Sometimes dicalcium phosphate is combined with a small percentage of calcium carbonate for the purpose of improving the texture. To prevent a gas-producing reaction between the two polishing agents, a very small amount of trimagnesium phosphate is added.

Any suitable water-insoluble phosphate may be used in dental creams and their characteristics have been covered thoroughly in the literature. The polishing agent usually comprises a major portion of the toothpaste formula and averages from 40-60 per cent. The Board of Standards of the Toilet Goods Association has published specifications for calcium carbonate (TGA No. 11), dicalcium phosphate dihydrate (TGA No. 35) and a stability test for determining the suitability of dicalcium phosphate dihydrate for use in toothpaste (TGA No. 44).

B. Stabilizers: No other group of ingredients is more important than the toothpaste stabilizer. Practically all stabilizers used today are hydrophylic colloids which serve to increase viscosity and thus prevent separation of the liquid portion of the toothpaste. Apart from long shelf-life, the stabilizer is responsible for many other desirable characteristics such as gloss, cream-like texture and ease of extrusion.

One of the earliest stabilizers, glycerite of starch, served faithfully for many years. It made a rather thick, pasty product which would be unacceptable today. Gum arabic, karaya and tragacanth became popular at a later period but have tended to lose favor in recent years. Today, the preference for soft dental creams has led to the utilization of newer and better binders such as synthetic cellulose and seaweed derivatives. Probably the most important and most commonly used stabilizers today are Irish moss extractives.

Toothpaste made with Irish moss extractives are thixotropic and set up time is usually slower than with other stabilizers. However, once equilibrium has been reached, viscosity tends to be far more constant despite wide variations in temperature. When properly formulated, the shelf-life stability is re-

markable. Irish moss extractives require preservation and this is usually done with esters of parahydroxybenzoic acid.

C. Humectants: A humectant serves a dual function; to help plasticize the mass and to minimize moisture loss during exposure. The most popular humectants today are glycerin, sorbo syrup and combinations of both. From 10-40 per cent of humectant is required to obtain a desired consistency and gloss.

Overuse of gum stabilizers may lead to a very dry looking paste which generally is not responsive to further increases in humectant. The stabilizer must be carefully balanced with the humectant and other ingredients to produce a glossy, cream-like mixture.

D. Sweeteners: By far the most popular sweetening agent for dentifrices is saccharin. Overuse may result in unpleasant taste effects; average use level is around 0.1 per cent. Sodium cyclamate has been used with saccharin in certain instances to provide a smoother flavor effect.

E. Foaming Agents: Soap has been employed for many years to create foam during brushing. While it is still being used today, surface active agents have proven far more suitable in this application. The reasons for this are that certain surface active agents are relatively insensitive to the pH range normally encountered in dentifrice base. Moreover, they function satisfactorily in the presence of hard water and can be used in much lower concentrations than soap. Among the well-known foaming agents are sodium lauryl sulfate, dioctyl sodium sulfosuccinate, sodium alkyl sulfoacetate and sodium lauryl sulfoacetate.

Foaming agents may contribute a definite aftertaste to dentifrices and the concentration employed as well as the purity of the foaming agent should be carefully controlled. The free fatty alcohol content of sodium lauryl sulfate should be kept at a minimum to avoid taste defects. Also worthy of scrutiny is the salt content, when the product is to be packaged in aluminum tubes.

Irish moss extractives are known to contribute to the stability of the foam during brushing and their use with the newer surface active agents is advantageous. Surface active agents are generally employed at the rate of 0.5-2.0 per cent of the toothpaste base.

F. Flavors: One reason for the widespread popularity of dentifrices is the careful selection of appealing flavors by the manufacturer. For the most part flavors consist of essential oils used either singly or in combination with other natural and synthetic products. It is always sound practice to buy the finest oils and aromatics available since experience has shown that off-qualities in a flavor are frequently augmented in the finished product. This may be detected either immediately after manufacture or during shelf-life.

Essential oils and other flavorants have a distinct plasticizing effect on toothpaste base even though they are used in very small amounts. This plasticizing effect may either thicken the base or more frequently thin it out. Methyl salicylate may increase the viscosity while peppermint and spearmint oils tend to reduce it. For the first 24 hours after manufacture, the flavored base is relatively fluid. From that point on the paste gradually comes to equilibrium. Flavor mixtures vary considerably as regards plasticizing action and the final effect can be determined only after extended storage. Thixotropic stabilizers such as Irish moss extractives generally take much longer to set but once equilibrium has been reached, very little variation occurs during shelf-life.

Toothpaste base can affect flavor quality adversely. Some essential oils used in dentifrice manufacture have mild anesthetic action on the taste buds. This sometimes gives rise to an apparently flavorless or weak quality in the base. However, an insipid quality is more frequently the result of toothpaste base, for even the finest flavors seem weak and inferior when combined with antagonistic material.

Antagonism may be ascribed to the selective absorption of certain constituents in the flavor formula, augmenting some notes and repressing others. This destroys the delicate flavor rendition and gives rise to peculiar and often unpleasant effects. There is also the possibility of chemical alteration or deterioration of certain ingredients in the flavor because of interaction with the dentifrice base or the therapeutic ingredients contained therein which may result in defects in color, flavor and odor.

Of considerable value in the hands of experienced flavorists are fixatives which can be used to advantage not only to extend stability but also to impart pleasant background notes, and integrate the whole flavor effect. Traces of certain fixatives such as flower oils and vanilla compositions have worked well in this application.

The problem of flavor fixation is in one respect not unlike perfume fixation, since in both cases the volatility of the essential oils is reduced. However, consideration must be given to the fact that taste plays a most important part in toothpaste. For that reason many fixatives that are otherwise acceptable, cannot be applied. Balsam resins for example, assert their character too strongly to be used in appreciable amounts, unless an unusual effect is desired. There are synthetic vanilla preparations based upon a high fortification of natural bean resins which have enjoyed success in the food field. These uncolored products when dissolved in the humectant help round out the flavor effect. Other useful products may be employed not only to help blend a flavor but to deodorize the breath.

There are no fixed rules which guarantee the

(*Continued on page 394*)

Packaging and Selling

Measured-Dose Aerosol Nasal Spray

being marketed by the Rexall Drug Company is a cold treatment item consisting of antibiotic and decongestive agents. The medication is in a stainless steel container and is dispensed by pushing a plastic button which releases a precisely measured dose into the nostril.

The pocket-sized aerosol contains 200 doses.

Owens-Illinois Assures You A Complete Packaging Approach

Co-ordinated Research

Pure research into fabrication of glass, *packaging research* into processing and handling methods in customer plants, *market research* into consumer attitudes. All add up to greater packaging value.

Engineered Design

At Owens-Illinois, your package's *three* needs are taken into account: 1) Considerations of its function in the retail store, 2) its operating efficiency, and 3) its consumer utility.

The Right Container

Versatility of facilities and talents make O-I your best source of supply. In container development—beauty, utility, tradition are blended in the right proportions for your product's needs.

The Right Closure

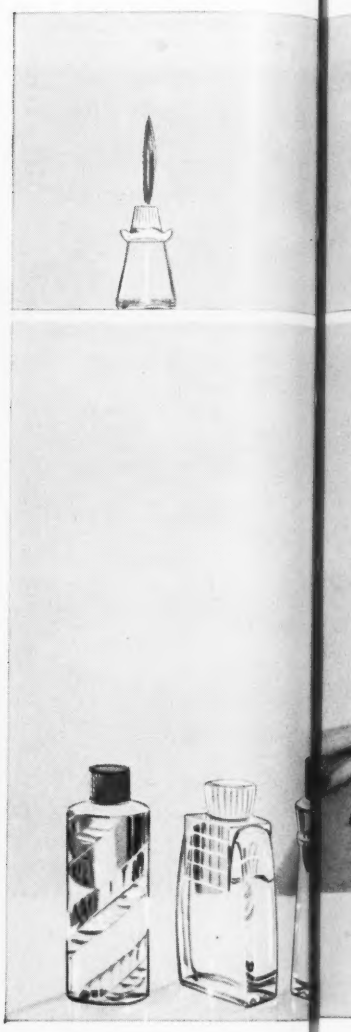
Through long and continuing research O-I has developed the most advanced metal and plastic closures. Helping you choose the right closure is another function of O-I's packaging service.

Needed Fitments

O-I specialists are keenly aware of sales benefits derived from plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.

Merchandising Cartons

Modern cartons such as the new "Openized Carton" with easy-open flaps are developed from study of their service to you in retail store and warehouse . . . on filling line or in transit.



These design models are examples of the types of "glamour packages" available through Owens-Illinois custom-design service.

Your products for glamour should be packaged in glamour

Striking and exciting packaging for toiletry products pleases every woman... is a factor in her personal selection. On dressing table or any shelf the package adds a touch of elegance... serves as a constant reminder of a product's quality.

Owens-Illinois' designers and packaging experts are ready to work with you to provide a distinctive, personal container for your toiletry preparations. The right container requires eye-appealing form, of course ... plus ease of handling in the filling line, lasting product protection and ease of use in the home.

O-I's Complete Packaging Approach offers more than the container alone... it provides artistic label design, the needed fitments, most suitable closures, and protective, merchandising cartons.

Call on Owens-Illinois for the complete salespackage to take your product into your customers' homes.

DURAGLAS CONTAINERS
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Package design begins with an idea

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PACK TO ATTRACT IN

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Blue or Flint • Jars and Bottles

NITROGEN AEROSOLS

BY FRANCIS A. MINA, PH.D., TECHNICAL DIRECTOR, LODES AEROSOL CONSULTANTS

The use of nitrogen for dispensing pressurized products has been heralded as a significant step forward in the ever growing aerosol field. Actually, the use of compressed gases in aerosols is not new and because of its relationship to the other compressed gases, a discussion on nitrogen would be incomplete without some reference to carbon dioxide and nitrous oxide. Carbon dioxide and nitrous oxide have been used for some years in dispensing such food products as whipped cream and other toppings. More recently, a barbeque sauce was introduced using a special CO_2 — N_2O mixture to minimize frothing due to expansion of dissovled gas at time of dispensing product from container.

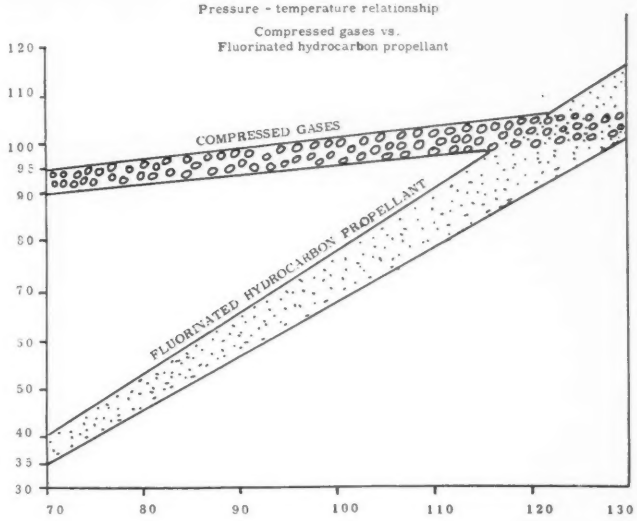
Nitrogen (and possibly argon and other rare gases) is particularly suited for products that are intended for non-aerated delivery. Typical in this category are such food products as catsup, mayonnaise, pancake batter, fruit and chocolate syrups, salad oil, cheese spreads, etc. A chocolate syrup is already being test marketed, but it is still too early to determine the extent of consumer acceptance for this product.

Application in the drug field obviously is also indicated. Vitamins, pharmaceutical elixirs, cough syrups, etc. are natural possibilities that offer excellent opportunity for nitrogen propelled aerosol packaging. In the field of proprietaries, several name brands of toothpaste are already available to the public, while a number of others are being readied for imminent marketing (Fig. 1). Two newcomers into the dentifrice field are utilizing the aerosol principle to introduce their new brands: Carter Products "Sno White" and Plastone's "Aero Dent."

Figure 1

FIGURE 2

Pressure - temperature relationship
Compressed gases vs.
Fluorinated hydrocarbon propellant



The use of compressed gases in general, and nitrogen in particular, for dispensing certain types of aerosol products offers a number of advantages.

Low Cost: Cost of the several compressed gases being used in production or experimental aerosols is measured in a fraction of a cent per unit.

Current prices for these gases are given in Table 1.

TABLE I
Cost Of Compressed Gas Propellants

Compressed Gas	Price Per Lb. (NTP)	Cubic Feet/Lb.
Carbon Dioxide	$0.04 - $0.08*	8.73
Nitrous Oxide	0.30 - 0.35*	8.71
CO_2 — N_2O mixture	0.30 - 0.35*	8.71 to 8.73
Nitrogen	0.08 - 0.20**	13.80
Argon	8.00 - 10.00**	9.67

*Usually sold on weight basis
**Usually sold on volume basis
These prices are approximate. Actual costs are determined on the basis of annual consumption by the individual customer.

The usual amount of nitrous oxide or N_2O/CO_2 mixture used per 12 oz. container of whipped cream or topping is approximately 4 grams per unit. On the basis of 100 twelve-ounce units obtainable per pound of gas, the propellant cost is approximately one-third of a cent per unit of CO_2 and/or N_2O-propelled aerosol.

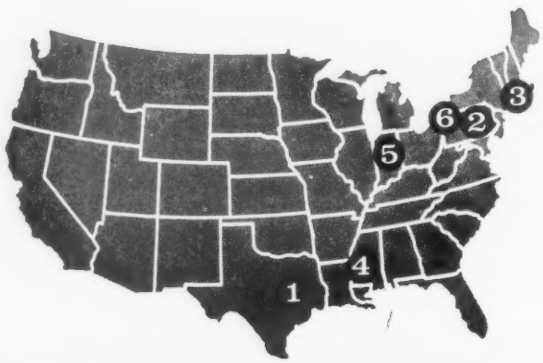
The amount of nitrogen required to dispense the allowable contents of a six-ounce container (the size most commonly used for aerosol toothpaste) is approximately one-half gram per unit. This provides approximately 800 to 900 six-ounce units per pound of nitrogen at an almost negligible cost of approximately $0.00025 per unit.

HOW PLANNED PROGRESS AT KNOX GLASS INCREASES CUSTOMER SERVICE

With an aim toward providing even better service to their customers throughout the nation, Knox Glass Incorporated has just completed a record year in plant expansion and growth. Here is a report of some of the results of Knox's nation-wide program of planned progress:

1. **Palestine, Texas:** Ground was broken in June, 1957, for a new plant to produce amber glass. It will be in operation within the next few weeks.
2. **Knox, Pennsylvania:** A new unit for the manufacture of emerald green glass containers went into operation in April; increased this plant's capacity by more than 40%.
3. **Danielson, Connecticut:** A completely new glass container plant is now under construction and will start producing a very broad line of flint glass containers this summer.
4. **Jackson, Mississippi:** An additional 50,000 square foot storage facility was added to the extensive Jackson plant to provide even better service to southern customers.
5. **Gas City, Indiana:** New and modern batch-mixing and storage facilities were completed early this year.
6. **Oil City, Pennsylvania:** Construction started on a new mould shop, designed to improve Knox's operating flexibility, in December, 1957.

If you would like additional information on how Knox can meet your needs for precision, high quality containers, write Knox Glass Incorporated, Knox, Pa., or contact your nearest authorized Knox representative.



KNOX GLASS INCORPORATED

Inertness of Nitrogen: This feature is particularly important in considering the marketing of foods and pharmaceuticals for acceptance by the Food and Drug Administration. The long history of nitrogen use in these fields (to exclude atmospheric oxygen in sealed containers) is certainly in its favor. It should be remembered, however, that the marketer must be prepared to submit adequate proof of the lack of toxicity for such components as valves, gaskets, container linings, etc.

While nitrogen imparts no demonstrable effect on the product base, nitrous oxide and carbon dioxide do alter the taste to some degree. Nitrous oxide tends to impart a sweetish taste while carbon dioxide produces a slightly acidic note. A blend of approximately 85 per cent nitrous oxide and 15 per cent carbon dioxide is commonly used in whipped cream, although some manufacturers use nitrous oxide alone as the propellant.

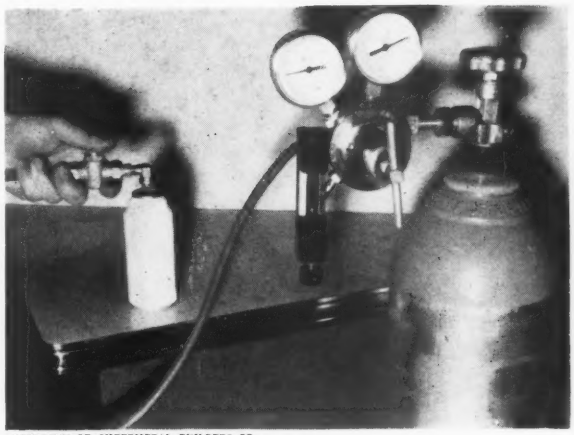
TABLE II
Solubility of Compressed Gases*
at 100 P. S. I. (Absolute)

Product Base	Nitrous Oxide	Carbon dioxide	Nitrogen	Argon
Water	3.5	4.7	-	-
Cream (36% Butterfat)	5.5	-	-	-
Cane Sugar (10% Solution in water)	3.1	4.4	-	-
37.5° Brix Solution (50% Invert sugar)	1.7	2.4	-	-
75% Brix Solution (50% Invert sugar)	0.06	0.11	0.06	-
Corn oil	11.2	10.4	0.35	0.87
Soya oil	11.6	8.7	0.75	0.64

*Ml. of gas evolved from product base on reducing pressure to one atmosphere at 77° F.
Solubility figures based on experimental data compiled by Air Reduction Company, Inc.

Solubility: The extent of solubility of several pertinent compressed gases are given in Table II. It is evident that nitrogen (and argon) are practically insoluble in sugar solution and oils. This property is particularly important for dispensing aerosols in a non-"aerated" form. It is because of this relative insolubility of nitrogen that so little quantity per unit is required to obtain the desired dispensing pressure.
Pressure: Nitrogen propelled aerosols usually are pressurized with the gas to equilibrium at 90 to 95 p.s.i.g. While such pressures initially are higher than aerosols at 70° F. utilizing fluorinated hydrocarbon propellants, at 130° F. the pressure of the former generally does not exceed that of the latter system due to the more gradual slope of the pressure-temperature relationship of compressed gases (Fig. 2).

A simple laboratory procedure for pressurizing nitrogen aerosol samples is shown in Figure 3.
Materials and Equipment: In general, materials and supplies such as cans, valves, etc. currently used in aerosol production can be utilized for nitrogen aerosol manufacture. While existing aerosol filling equipment may require only minor modifications to permit nitrogen filling, it should be remembered that the very nature of the product types utilizing or being considered for nitrogen-propelled aerosols



COURTESY OF SHEETMETAL BUILDERS CO.
Figure 3

strongly dictates the necessity for separate equipment reserved specifically for such use, preferably installed in a building completely separated from, or at least in an isolated area of, a conventional aerosol filling plant. Such equipment, including all piping and connections, should be readily cleanable and components such as pumps preferably should be of the sanitary type used in the dairy industry. These pumps are easily and quickly disassembled for thorough cleaning and sterilization.

Limitations

While no attempt is being made to minimize the advantages discussed above, the use of nitrogen for propelling aerosol products does involve a number of definite limitations.

Gas Loss: As stated earlier, the relative insolubility of nitrogen in the various product bases favors its use for aerosolizing non-aerated products. This very advantage on the other hand provides a serious shortcoming in that no propellant reservoir is available to replenish gas lost during storage, or in the event of accidental discharge of gas while product layer is tilted away from the open end of the dip tube or valve inlet. This problem is not quite as serious in foam products using CO_2 and/or N_2O mixtures since the dissolved portion of these gases would tend to evolve from the product base to reach equilibrium and thus replace any nominal amount of lost gas.

Accidental Discharge: The problem of accidental discharge* of compressed gas is a particularly important one in connection with viscous products such as syrups and toothpaste, and with those units incorporating valves having no dip tubes.

Because of the flow resistance of viscous products, a unit inadvertently stored in other than an upright position is quite likely to lose its entire charge of pressurized nitrogen if the valve is actuated before the dip tube opening is covered by the product base. This difficulty, of course, is minimized in products having a free flowing water or other low-viscosity base. *(Continued on page 402)*

*The problem of accidental discharge appears to be near solution with a modification under development by a valve manufacturer.

Colonial

Cellophane Packaging

For Eye Appeal

EYE APPEAL is "buy" appeal in today's highly competitive marketing picture—and there's nothing that adds more sparkling freshness than Colonial's cellophane packaging. Consumers like that fresh, clear look—that sparkling "top of the morning" freshness that catches the eye and clinches the buy.

When that spotless Colonial dropper assembly is placed automatically into its gleaming cellophane package, it's a guarantee that it's going to stay spotless and dust-free right through to the ultimate consumer.

Colonial's cellophane pack is good insurance against breakage in side-by-side packaging, too.

Let us make free samples to your exact specifications. Contact our representatives listed at right, or write direct.

Specialists in Glass and Plastic Droppers and Assemblies for nearly a quarter of a century

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Ph: WAbash 2-1619

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COLONIAL APPLICATOR CO.

VINELAND, NEW JERSEY

How Public Relations Helps Sell Bristol-Myers Products*

BY JAMES L. MacWITHEY, DIRECTOR OF PUBLIC RELATIONS, BRISTOL-MYERS COMPANY (N.Y.)

The Bristol-Myers Company's public relations program, of course, is integrated with the programs of its various subsidiary companies, of which the Bristol-Myers Products Division is perhaps the best known because Bufferin, Ban, Trushay, etc., are so extensively advertised. One of our objectives is to supplement advertising with product publicity programs. But I want to emphasize that our public relations program is by no means restricted to product publicity.

Bristol-Myers has many publics which must be reached in different ways. Besides consumers of our products, there are stockholders; suppliers; the Government; the medical world; schools and colleges; towns where we have plants; the food, drug and variety store trades; employees; the financial world; the trade and consumer press; etc., etc.

All of them are different publics which are dealt with in different ways, day after day. And each requires a different type of tailor-made public relations program. Nevertheless, practically every program, regardless of its nature, involves our products in some way.

When anyone buys stock in our company, he immediately receives a gift box containing most of our consumer products. We don't tell new stockholders to recommend these products but we're sure they do. In that way, all our stockholders become in effect, boosters of our products. Certainly this is a form of product publicity.

When local residents visit our plants for specific occasions, we give them a gift box. I'm sure the recipients use the products—and as everyone knows—a trial usage, often results in permanent usage.

Now, I don't want to imply that gift boxes are tossed around indiscriminately. That certainly is not the case. They are given out only under special circumstances. However, we often can create good will even when we do not hand out gifts. Our education division—which does a remarkable job with teachers and school children—gives invaluable information on health, etc.—geared specifically to their needs—and apparently this is very much appreciated—judging from the response.

Practically all phases of our public relations program—regardless of their nature—are in some way linked to product publicity and rightfully so. For in the final analysis, everything we do, whether it is creating good will in the community or schools or creating better communication with retailers selling our products, all add up to two words that are dear to any manufacturer—more sales.

JAMES L. MacWITHEY

Right now, we have six full-scale product publicity programs running on Ban, Bufferin, Mum, Theradan, Trushay and Ipana Plus. Whether our objectives are getting maximum coverage on a new brand like Theradan or Ipana Plus, or giving an old brand like Trushay a shot in the arm through publicity—we feel we are achieving excellent results. Last year, for example, we estimated that we obtained about 3,000 brand name mentions for Trushay in print copy alone.

Publicizing new products—and I cite Theradan as an example because it has been out only about six months—requires careful preparation.

After getting all our facts together—we wrote a number of interesting releases, feature stories and fact sheets. These were put together in a press kit together with pictures and sent to beauty editors on newspapers, magazines, wire services and syndicates. Timing was important. For example, editors on

*From a talk delivered before the Philadelphia Public Relations Association.

Only MERITSEAL offers all five advantages

the prestige closure for your finest products

This modern, eye-catching closure performs a brilliant merchandising job on retailers' shelves and counters . . . gains special favor and lasting brand identity for your products. And Meritseal is designed and manufactured as a functional cap as well.

Send for samples . . . and full information about Meritseal prices . . . delivery . . . other specific data.

1. **SPINS ON SMOOTHLY** on high speed production lines.
2. **PROVIDES DEPENDABLE PROTECTION** for your products . . . handles easily in the consumer's hands.
3. **SHOW CASE LITHOGRAPHY** helps sell your products.
4. **SEPARATE THREAD CONSTRUCTION** locks the liner in . . . prevents spinners . . . makes removal easy.
5. **WIDE VARIETY OF LINERS AND SIZES** to meet the requirements of your particular products.

CROWN CORK & SEAL COMPANY, INC.
Baltimore 3, Maryland

CROWN

Manufacturers of
CLOSURES
CONTAINERS
MACHINERY

newspapers were not given the press kits until a week before distribution was effected in a particular city. We have found from experience—and I'm sure you know this even better than I do—that nothing infuriates an editor more than suggesting a story on a product that is not available in a city. You also know—on the other hand, that editors are also impressed when they realize that a company considers a product important. That is one reason we carefully prepare our press kit for any new product—as in the case of Theradan. We know that so many companies just bang out a release and send it out indiscriminately. We are discriminate and painstaking—and it pays off.

In many cities, stories about Theradan—based on material we sent—appeared in beauty columns. The fact that these stories were by-lined by the beauty editors themselves, give them great weight. What's more these editors actually used our product before they wrote about it—a factor of great importance. Consumers like to know that they are advised by editors who have their interests at heart and will not recommend anything until they have used a product and found it desirable.

Now let's consider Bufferin—which unlike Theradan, a newcomer, has been manufactured by Bristol-Myers for about nine years, and is certainly a top seller.

Well, when Bufferin first came on the market it was publicized as a new product. This program was continued for a while—but the time came when it was no longer a new product—as a result we had to evolve new, legitimate ways of publicizing Bufferin. Doing so did not give us a headache—and you perhaps will soon see why.

About eight months ago on "You Bet Your Life" show Groucho Marx spoke of Bufferin and even said it works twice as fast as aspirin. (Groucho, by the way, is not on the Bristol-Myers payroll).

During the last election you probably read in newspapers that many politicians were going to need a lot of Bufferin to cope with campaign headaches.

And not so long ago—many of you may have seen the amusing sketch on the Jack Benny show where a man with a rattling stomach told Benny that he was the one whose stomach was used on the air for Bufferin commercials.

Bufferin mentions like these result from suggestions we make to script writers, production supervisors, and even the stars themselves. Sometimes we write specific stories and often spend considerable time doing so—if it will help. Take our automobile safety series. Year after year we collect new tips on safe driving. Incorporated into the feature stories is one tip which says "don't drive if you have a headache. It just isn't safe". We then go on to suggest keeping Bufferin in a side compartment of an automobile—just in case.

Now you see our automobile safety story is an interesting one. It contains many valuable tips—one of them of course related to our product. But that is beside the point. We are not demanding a product mention. We are earning it because it has become a legitimate part of a legitimate story of great interest to readers. And that is why editors use it. True, sometimes the brand name is cut out,—so what? The percentage of used stories is so good that our efforts are well worth while.

Now this raises two points:

First, although Bristol-Myers are heavy advertisers we never never bring pressure on a newspaper, magazine or radio or television station. In fact we never approach advertising directors on any media. Anything we get, we get on the merits.

Second, we know our product publicity—be it in newspapers, magazines or radio or TV—definitely pays off. Reader response, manifest in letters we receive is but one of many indications that what I say is correct. Furthermore, the more times a product is mentioned on the air—or the more times it is mentioned in print—the more impressions it makes on people. And this means—coming back to two words I previously mentioned—more sales.

Yet, you can have very good products, backed up by beautiful advertisements and excellent product publicity. Yet you will have mediocre sales if the public has little faith in a company or a poor concept of it. That is why I have long insisted that product publicity programs, no matter how good they are fall by the wayside unless the public feels kindly to the company making them. (*Continued on page 401*)

Our N-30 line of machine made, flint glass bottles is made up of 9 sizes ranging from 1/8 ounce to 8 ounces. They can be supplied plain or decorated to your specifications with fired-on ceramic labels.
N30
Toilet Water
N30
Lotion
2 FLUID OZ.
N30
Perfume
CARR-LOWREY GLASS CO.
Designers and manufacturers of fine glass containers
Factory and Main Office: BALTIMORE 3, MD. • New York Office: 415 MADISON AVE. • Chicago Office: 1572 MERCHANDISE MART

Packaging and Selling

Ingrams

Long ago in 1930 Bristol-Myers purchased the Frederick F. Ingram Company in Detroit, the company that had been marketing toiletries and cosmetics since 1885.

We remember our puzzlement at this time over why Bristol-Myers made this purchase. It was not that there was anything particularly wrong with the product that Bristol-Myers wanted, that is Ingram shaving cream. Our puzzlement came from the fact that Bristol-Myers was rolling along at this time as one of the leading companies of the trade with a very fine factory, a good laboratory and a very well managed, efficient sales force. Ingram's shaving cream, at this time, was a perfectly reputable product, but with no particular outstanding features and with no particular momentum.

We recall asking Earl Means, who at that time directed the sales force and the sales policies at Bristol-Myers with wisdom, imagination and energy, just why they had made this purchase and paid the reported sum of $1,000,000 when it seemed to us that Bristol-Myers with an excellent name and acceptance from the retail trade could, within a period of a few months, put on the market a shaving cream and so reach the Ingram volume at considerably less than an investment of $1,000,000.

We remember Earl Means' reply vividly. He said that probably we could do everything you say. We have the factory. We could get a formula. We have the sales force. I think we could quickly get distribution and a $1,000,000 is a lot of money today, to launch a new product. However, he said, that what you do not realize is that we are not buying a shaving cream or a packaged product or brand name. What we are really spending a $1,000,000 for is time. That is, we figure it to easily take from two to three years to reach the point where Ingram is now and we do not want to spend those two or three years. We would rather buy them.

Following the purchase, Bristol-Myers carried on that famous consumer advertising campaign in which they gave the consumer an opportunity to vote as to whether they wanted Ingram in a tube or in a jar. At the end of this campaign Bristol-Myers announced that the tube had won but there was always a lingering impression that too many of the consumers were not too excited about whether Ingram came in a tube or a jar. In fact, not too many were sure whether they wanted Ingram or not.

Nothing particular happened to Ingram although Bristol-Myers is reported to have spent nearly $4,000,000 in consumer advertising up to 1947.

At this time other products coming along showed more promise than Ingram's with the result that this vulnerable product began again to slide into retirement.

Now, once again, Ingram starts out with renewed vigor. A new company, Ingram Menthol Company, Inc., 15 West 44th Street, New York City has taken over this company. The president is James A. Field who gained his trade experience with J. B. Williams, Warner-Lambert and a spell at two leading advertising agencies.

According to Mr. Field, the initial consumer contact will be directed toward the man who once knew and used Ingram. The product will be priced at 59c retail and will have some packaging innovations to help retail display. The formulation of Ingram will have several talking points. In the menthol formula natural Brazilian menthol will be used rather than the synthetic. The product will also contain no caustic soda and will have milk added as a buffer to the alkalinity.

We wish Mr. Field well in tackling one of the historical tough jobs of our industry, that is to revive a lagging product in a lagging market. It is not often that this has been done, but with a creative imagination, a new viewpoint and new vigor there ought to be no reason why this old and respected name should not return to a prominent place in the industry.

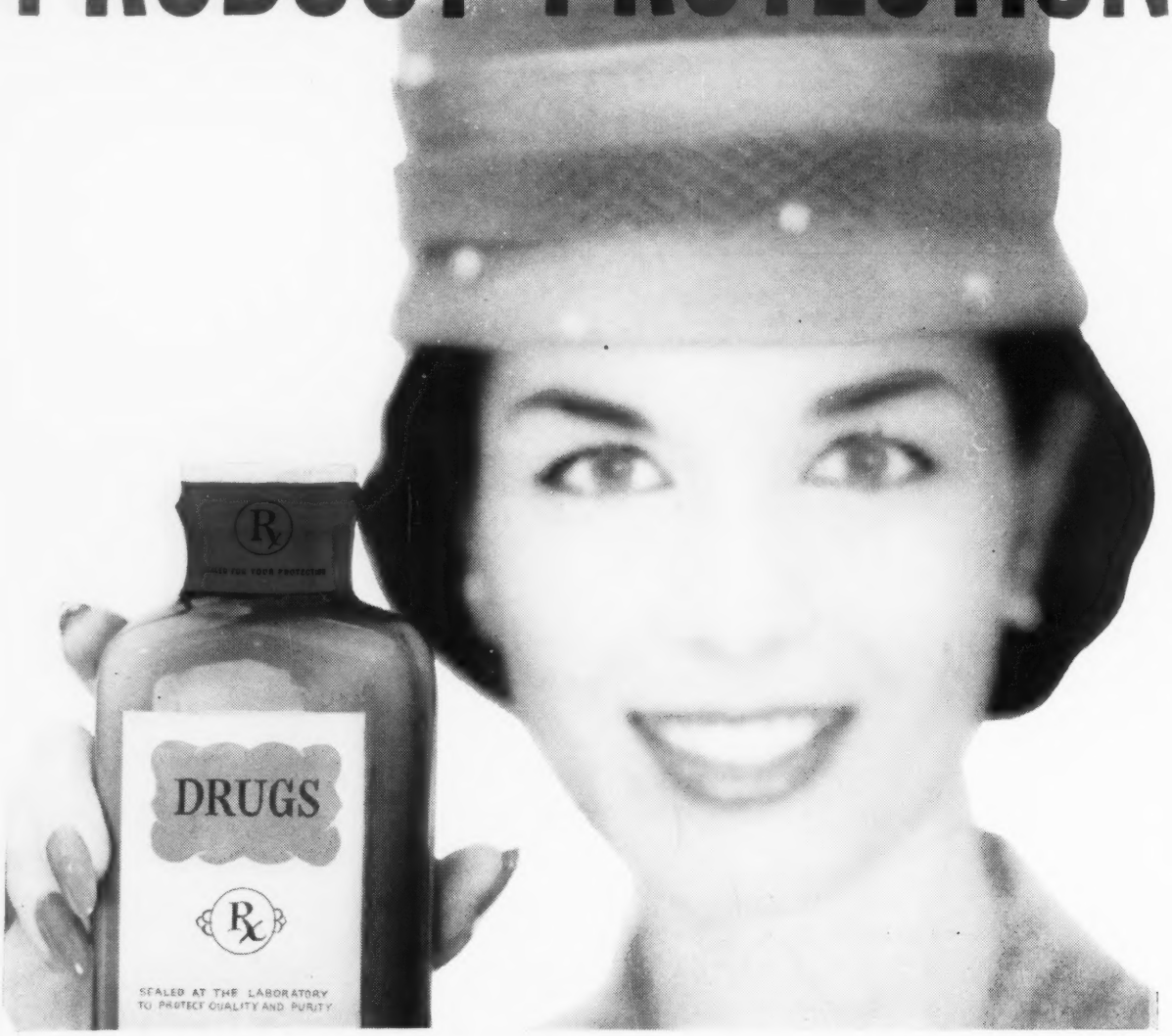
Hectic Toothpaste

We have said before in this department that toothpaste is rapidly becoming the product in our industry which commands the least customer brand loyalty. The reason why we make this statement and have made it in the past is that practically every year some so-called new discovery, new device or new gimmick hits this part of the trade with a weight of a multi-million dollar campaign and starts the toothpaste using public off on a new adventure in trying something new.

The fact that the public has been educated to expect an experiment with something new for toothpaste on a continuing basis has continuously opened this market to new competition in a way that would have been impossible several years ago.

Anyone would think that in a market where sev-

PRODUCT PROTECTION



Du Pont CEL-O-SEAL Bands offer sales-minded drug manufacturers tamperproof protection plus merchandising impact

REG. U. S. PAT. OFF.

Nothing is more important than product quality, especially for drugs and related items. That's why it pays you to seal your glass-packaged products with Du Pont "Cel-O-Seal" cellulose bands. These colorful tamperproof seals are a guarantee of quality—a guarantee that sells!

What's more, striking "Cel-O-Seal" bands are personalized eye catchers at point of sale—the perfect way to dramatize your brand name, trademark, sales messages . . . the practical way to meet today's demands for packages with both *sales appeal* and *tamperproof protection.* Give your products this double selling edge!

See how decorative and protective "Cel-O-Seal" cellulose bands can help your packaging program. For complete information, write: E. I. du Pont de Nemours & Co. (Inc.), "Cel-O-Seal" Section, 10414-D Nemours Bldg., Wilmington 98, Delaware. "Cel-O-Seal" cellulose bands are also sold by Armstrong Cork Co., Glass & Closure Div., Lancaster, Pa.

Du Pont CEL-O-SEAL Bands

REG. U. S. PAT. OFF.

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

eral large competitors are investing millions of dollars in advertising and spending from 20 per cent to 40 per cent of sales in advertising that these different competing brands would so shut off the market that it would be impossible for a newcomer to enter without a strikingly original idea and without years of toil and millions invested in advertising.

In the past, newcomers in toothpaste have entered the market by way of some so-called new chemical discovery. Now it seems that the package is to have its day.

We see in the news that following rapidly on the heels of Colgate's new aerosol package toothpaste that Carter Products, Inc. is now market-testing a new 98c aerosol dentifrice Sno White. This is Carter's first entry in the toothpaste field.

We suppose that if Bristol-Myers gets favorable attention to its plastic toothpaste container that this will open a way for newcomers using this particular container.

We think it is a great thing to see a diversity of containers and applicators enter this field. It may be that the creative imagination in packaging and packaging design has a great deal to offer this part of the industry with new packaging advantages and new application conveniences.

It is an undoubted testimony to the American publics attitude toward better packaging that the mere fact of a new package can make it possible for a new company to enter a highly competitive market without anything new to offer in the way of oral cleanliness.

Discount Directory

The new edition of the National Directory of Discount Dealers has just been published. This book covers 3,100 names and addresses of discount dealers. Published by Hoge, Farrell, Inc., 699 Madison Avenue, New York 21, N. Y. Price, $9.95 each.

Avon's 1957 Sales: $100,379,694

Let this industry, let the industry of the United States and let all the world take note. For the first time in the 5,000 year history of perfumes and cosmetics one American company has passed the line of $100,000,000 in annual sales.

Yes, gentlemen, note well the fact. Avon Products, Inc., the first cosmetic company in the world to reach a hundred million dollars in sales, in 1957 hit $100,379,694.

Growing Dial

Not only in the soap industry but many other people in other branches of this industry have been amazed to see recent surveys showing that Dial is now the number 2 toilet soap (one survey says number 1 place).

This amazing success of Dial, which was introduced first as a high-priced class product in department stores, then slipped into mass distribution and crept into leadership before the big time in the soap industry knew what was happening, is starting a new kind of competition, probably a new trend in the soap business.

In addition to giving toilet soap a secondary function, that is a bacterial or a deodorant action, as a plus to its classic cleansing function, Dial's trend may move the toilet soap over into other functions such as a secondary method of applying some still to come new gimmicks, gadgets, chemicals or inventions.

Toilet soap has been a startling staple from the viewpoint of the product and its promises. Now maybe it is ready for the tooth paste merry-go-round.

Purchasing by Committee

A growing policy among the supermarket chains is purchasing by committee. This policy is causing a great deal of agitation and complaint from manufacturers, but apparently, from a recent chain store report, it is a new element in marketing that a great many manufacturers will have to get use to.

In a recent report at the annual meeting of the Grocery Manufacturers of America, William C. Nigut, a Chicago marketing counsel and former assistant executive director of the Super-Market Institute, came up with a survey that produced some rather startling conclusions.

One of these conclusions was that chain store purchasing committee's tend to brush off advertising programs when they decide what items they will purchase or feature.

In making this survey, Mr. Nigut sat in with a buying committee in 12 leading supermarket chains and listened to their procedure in appraising 496 different products.

In these 12 different buying committee meetings there were references to or questions about the advertising of only 44 products, that is less than 10 per cent of the products submitted. Advertising portifolios of proofs of advertising were shown in 4 of the 12 meetings.

According to Mr. Nigut's conclusion, as we read it, advertising is not playing anywheres near as important a place as many advertisers and all advertising agencies think it plays either in securing distribution or in securing favorable consideration in a retail store at the point of sale. Just to quote one example given by Mr. Nigut and reported in Advertising Age, "Here's another example of where advertising or the presentation of it, did not help the sale:

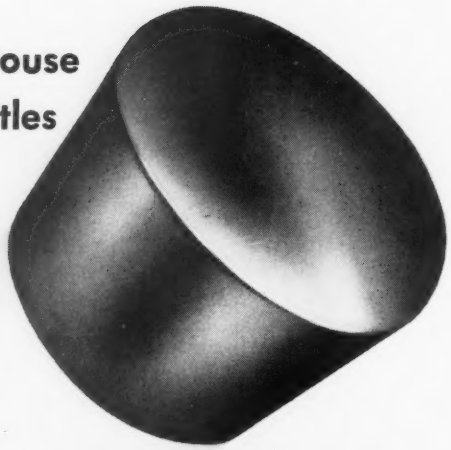
Within about six weeks, three committees considered the same new product of a well-known manufacturer. The salesmen told two of the buyers that the manufacturer was going to spend $15,000,000 on advertising in two months to introduce the product. In addition, the company was assured by its advertising agency that with this kind of a saturation campaign the product would have a 15 per cent share of the market within three months of its introduction.

The two committees agreed they would wait several months before reconsidering the item.

The third buyer got a completely different presentation of the item and his committee bought it.

Quite contrary to what a lot of big advertisers and a lot of big agencies believe, that is we are entering

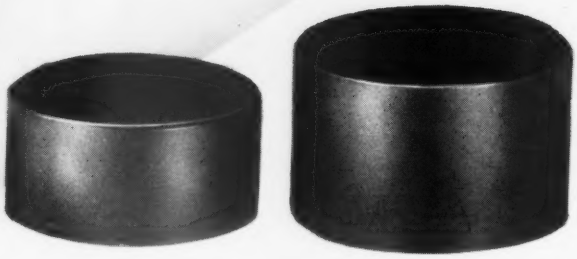
from **RICHFORD**'s magic storehouse of closures and caps for all stock bottles or your own private molds

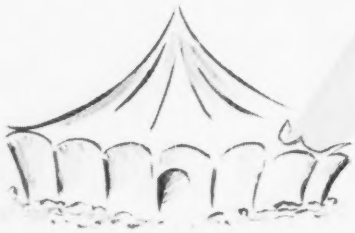


the BIG top

Straight side flush fitting caps, size #18-415 and #20-415 to fit 2 oz. and 4 oz. stock bottles available from leading glass manufacturers.

In black phenolic, colored urea (your choice), or in the well-known Goldcôte® and Silvacôte® vacuum metalized finishes.





and sparkling new futuras

Tapered sides, concave tops, perfect proportions identify these as "CAPS WITH A FUTURE" — made in #'s 10-425, 13-415, 15-415, 18-415, and 22-415 standard sizes, in black phenolic, colored urea (your choice), or in the well-known Goldcôte® and Silvacôte® vacuum metalized finishes.

ALL RICHFORD CLOSURES ARE AVAILABLE FROM STOCK.

WRITE FOR SAMPLES AND PRICES.

RICHFORD
CORPORATION
3618 Oceanside Rd., Oceanside, N. Y.

N. Y. Showrooms
Empire State Building
350 Fifth Ave., N. Y.

the electronic automatic age where marketing is simply a mechanical procedure of developing a demand by enormous advertising appropriations and for that reason every link in the chain of distribution all automatically click into place, this is not quite the true picture of that most automated of all dealers, the supermarket. It seems that the committee actually does very seriously consider the quality of the product, the virtue of the packaging and their own creative ability as merchants.

According to Mr. Nigut, the committee method of buying has these definite advantages. (1) The opportunity to get a hearing for a product that is properly conceived, properly tested and properly marketed in the consumer's interest; (2) The opportunity to capitalize on and get full value for the trade selling job that you have done in the last five, ten or fifteen years. If you have worked diligently at creating warm trade relations, and if you have a record of good service with supermarkets and chain store operators, then you have no cause for concern. If you have not, your competitor has an important advantage; (3) The buying committee offers you an opportunity and a challenge to modernize your sales methods.

It was under this opportunity that buyers reported that many salesmen do not know how to sell. "They beg, coax and whine." For another thing, the company sales planning and sales technique are often developed in some skyscrapper office by men who have never been in a supermarket sales office. For instance, many committees are bored with stock, sales presentation and slide-film presentations.

Color in Advertising

Here are some interesting facts and figures on the effectiveness of color in advertising. These are from a survey recently made by the Milwaukee Journal.

The study shows that color advertising attracted almost twice as many readers as black and white. It also showed that color advertising reduced men's apathy toward ads. It concluded that color advertising was more effective on men than women.

New Product Resistance

If there is any value in adding up retailer complaints as reported in convention speeches and in the trade press, then they are certainly a very clear indication that we are coming to an end or at least a leveling off of the flood of new products that have been so characteristic of the last decade.

We say the flood of new products but we really mean the large majority of new products that never had any real reason for being born. These unnecessary new products have been characterized by an incidental new gimmick in product, package, promotion or advertising, or were a rush job to meet some new competitive situation, or had some superficial impulse or not very vital reason for being put on the market.

According to the statement of leading retailers recently, "At least one out of every three new products exactly duplicates a number of items already on the market." We would say that this is super, super conservative. In our experience in this industry at least three-fourths of the new products that have been put on the market over the last ten years had no noticeable or apparent quality of value that was not completely duplicated by other products already on the market. Let's also hasten to add that in every instance for these unnecessary new products there was already a very tight competitive position.

A supermarket operator was quoted as saying, "Right now I am looking at about 55 new products on my desk. At least 20 are exact duplications of products now being sold under different brands."

Even when there is some slight difference to provide any talking point, these new products are making an increasingly severe inventory problem which is beginning to cause dealer revolt. For instance, there has been a report from the trade in regard to soap that in addition to an increasing number of new soap packages differing in size, there now appears to be a trend for bringing out a very wide variety of soaps in pastel colors which requires more inventory and more shelf space.

At a recent retail meeting, it was generally agreed that when a manufacturer offers a new product which has nothing new to offer except a difference in the size of the container, a very minor change in the product or the packaging, that the buyer resistance is considerable.

Of course, this does not mean that new products are not welcome by the retailer. The fact is today that new products are the breath of life for successful, expanding business. Every retailer knows how essential they are, both for maintaining traffic and for keeping consumption at a high level.

Nevertheless, there is, without any question, a developing attitude that the manufacturer must devote more research, more ingenuity and more creative imagination to the new products which he offers to the retailer in the future.

Mood Packaging

The truly enormous increase in activity during the last several years has been stimulated by an overwhelming, continual flow of new products and by a product obsolescene that has been truly astounding in its intensiveness. This feverish activity in the enormous increase in the birth rate and the death rate of package products has in turn brought about a tremendous growth in packaging services, such as, for instance, package designers and package consultants.

One might wonder what would happen to many of these services if we came out of this feverish period into a more solid and staple period where fewer unnecessary products were born and a higher percentage of those that were born lived a few years longer.

Just to show that the genius of the package people will be equal to this occasion we cite a recent development in packaging which is beginning to catch the industry's imagination.

This new development has the very apt term of "Mood Packaging." Of all places, it's making its first appearance in that toughest of all selling spots, the grocery supermarket.

The strategy behind Mood Packaging, as we had

read it described by the two package designers, Gordon Lippincott and Walter Margulies, is to create a psychological mood rather than a specific functional packaging appeal which features the product or the recipe.

Mood Packaging is appearing primarily in the food field where the package seeks to create a mood such as the exotic feeling of foreign eating places or a similar suggestive atmosphere.

So far as we know, Mood Packaging has not moved in any particular way into the drug or cosmetic field. It would seem to us that we have many interesting possibilities here.

Tooth Decay

We do not know who is doing the product research on the new chemical which the Wisconsin researchers have found in oat hulls as a factor in reducing tooth decay. We do think, however, that this industry better get on the job pronto because the publicity reports are going around that this product should be incorporated into candy and chewing gum as a means for preserving the teeth.

We note that the toothpaste people, after a lull of about two years in their normally hectic life, are now absorbed with the competitive challenge of colored, striped toothpaste, of toothpaste in aerosol and toothpaste in plastic bottles. Nevertheless, if this Wisconsin discovery has real merit, rather than driving the American public to chewing oats, one of them ought to do something about it.

Co-op Advertising

Most manufacturers who use cooperative advertising, particularly in the cosmetic industry where it is probably used more widely than any other trade except a few special branches of apparel, have been building up a very serious series of complaints over the last several years about the abuses which have developed in this form of advertising.

Because we have heard so much about the advertising abuses which have been plaguing this particular industry, we were extremely interested to note recently some of the complaints which have been registered by corset manufacturers.

These complaints are all the frequent complaints of this industry.

For instance, the first complaint is that the store has complete control of the advertising copy. Most manufacturers realize that many department stores are using their newspaper advertising to identify a vivid store personality. It would be foolish for a manufacturer to ask the store to abandon this personality advertising and to accept a patch work quilt of variations. The complaint here is not so much that the manufacturer wants the store to change their style and layout. What they do object to is that when they have carefully worked out advertising copy and descriptive terms and words which tests have proven will sell their product that some junior copy writer in the store's advertising department throws all this copy research in the basket and uses a lot of meaningless words and product descriptions.

The complaint that the brand name is apt to get lost is also a very old one in this industry. It even produced the story current in this trade a few years ago about two manufacturers discussing their advertising and one said, "Did you see my current ad with such and such a store yesterday?" The other manufacturer answered, "I thought I looked at all of the ads closely but did not see your product mentioned at all. There was one very striking advertisement on costume accessories including gloves and handbags but I did not see your product." The other manufacturer answered, "Well, my perfume bottle was in that handbag."

The complaint regarding the association of other brands that may not be advantageous does not happen very often. It does however indicate that a manufacturer of a style or prestige product might be involved in an advertisement for which he would have to pay and for which he would never have okayed if he had seen it in advance.

The complaint that the department tie-in at the point of sale may not be properly coordinated is certainly the most frequent complaint and is without any question the fundamental and most serious abuse in cooperative advertising. We would not dare venture a guess as to the percentage of cases where the store completely and utterly fails to cooperate with the cooperative advertising, where they fail to notify the department, where there is no display and where the sales people behind the counter do not even know the advertisement is running. It certainly does run to quite a large percentage.

Another complaint that is not mentioned here but which is a problem of all cooperative advertising is the increasing tendency of a number of stores to abuse the advertising rate.

No manufacturers know how much a store is paying for their local rate, although wise ones can make pretty shrewd guesses. The fact is that some stores are making a substantial profit on their local rate and some have even tried to exceed the national rate. This whole situation on the basis of charges is a mixed-up mess full of serious abuses. Add to this the complaints that some stores do put a charge on mats, layout and service and you get an increasing abuse of cooperative advertising, which incidentally the newspapers have refused to face, and which some day must be ventilated.

Sounds Familiar

It is not as easy as you might think to put up a new supermarket store—at least, according to some recent words from a planning executive responsible for new food chain supermarket stores.

According to the words of this man, "After the economist and analyst and statistician have prepared figures to show how much business can be expected from a market in a given location and after this estimate has been salted down by your finance committee, spiced up by your merchandising men, and rounded off by the seasoned judgment of the president of your company, then comes the question: How large a building in terms of selling area; and how many parking spaces must be provided in order to do this volume of business?"

AEROSOL PACKAGING

can give your sales "steamroller" power!

Here's how General Chemical can help you get started...

If you've been watching the aerosol field, you've seen product after product come out in aerosol form and roll over its competition with irresistible force.

Could *you* market an aerosol that would have similar success?

A qualified "yes"

If your products can be sprayed, brushed on, dusted or daubed, aerosol packaging may well give them that vital "push." And now's the time to get started—while the field is still growing... while consumers still think of aerosols as "new" and exciting.

General Chemical can help you

As the producer of "Genetron" aerosol propellants, General Chemical has the basic knowledge and specialized experience you need to get started. We will be glad to supply market information and technical data. We can tell you about promising new types of aerosol formulations developed in our laboratories. We can tell you about qualified contract fillers—who can take over the entire production job for you, from test market quantities to commercial production.

The fact is, you don't have to invest a cent in special equipment or personnel to get into this profitable market!

These information services of General Chemical are available to you without cost or obligation. Why not take advantage of them now? Just call or write "Genetron" Department, General Chemical Division, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y.

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GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

The right propellant for every aerosol need

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aerosol propellants

News in Packaging . . .

Sees Color Over-emphasized In the Designing of Packages

Too much emphasis is placed on color in packaging, according to Jim Nash, president of the Package Designers Council. While stressing that color is an important element in package design, Mr. Nash said that "the over-emphasis placed on one design element alone is weak. A package should use color as one phase of good overall design. A package should do more than just look pretty. It should establish brand loyalty and long-term identification."

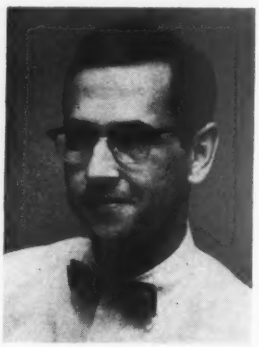
Color is becoming stereotyped in its association with food and drug products, he said. "Coffee cans are lost in a red and maroon maze. Add to this the 74 packages in yellow for teas and you can see color as an over-used trend." In producing a label for McCormick's mayonnaise, Jim Nash Associates chose the color red. "Almost all of our competition had blue labels," said Mr. Nash. "We could not out-blue the market so we created a different color to compliment the product. The new package sold wonderfully well . . .

"Manufacturers who use color because 'it is the thing' or because color can now be produced economically are missing the sales boat. Although color is important at the point of sale, brand loyalty should be emphasized. Color gets a disproportionate amount of attention, and it is secondary to overall design."

The Camette brand line of aerosols being introduced by Strouse, Inc., are packaged in Crown Can's six-ounce Spra-Tainers, a different pastel color for each product. Matching color plastic caps complete the cosmetic motif of the new products. Valves are from the Precision Valve Corp.

Promotional Package Developer

To evaluate its packaging designs and techniques, Smith Kline and French Laboratories has created in its advertising department the position of promotional package developer. Appointed to the post is Howard Berger, a chemist and former unit head in SKF's analytical laboratory, who since 1953 has been



HOWARD BERGER

package developer in the firm's Manufacturing Division.

Hazel-Atlas General Mgr.

J. Gordon King has been appointed general manager of Continental Can Company's Hazel-Atlas Glass

J. GORDON KING

Division. He was formerly a vice-president of Owens-Illinois Glass Company.

Harold Lee Joins Old Empire

Harold Lee has been appointed manager of aerosol product sales for Old Empire, Inc. He was formerly Eastern sales manager of Continental Filling Corp. and previously vice-president of G. Barr & Co.

Honorable mention in the recent Fibre Box Association contest was won by Helene Curtis Industries for its cosmetic products corrugated container and by Container Corporation of America, which designed and produced the container. Don Piggott, right, buyer for Helene Curtis, receives the joint award from Richard Johnson, development manager for Container Corporation's Midwest corrugated division. Looking on is William Schafer, salesman at the firm's Ogden Avenue plant, Chicago.

Aerosol Toothpaste Market

Aerosols will capture ten per cent of the toothpaste market this year and should account for nearly one-quarter of all toothpaste packages sold in 1959, Kenneth M. Leghorn, president of Sun Tube Corporation, has predicted.

"Because the aerosol can is more expensive than the conventional metal tube, dentifrice manufacturers can be expected to offer aerosol toothpaste in the large or 'economy' sizes where the price differential is smaller," Mr. Leghorn said.

"While aerosols will get a progressively larger share of the dentifrice container, we expect no change in the demand for metal tubes. This was our experience with shaving cream tubes after the introduction and wide consumer acceptance of aerosols for shaving preparations."

"Foolproof" Pressure Can

A new "foolproof" pressure can that will dispense the product regardless of the position in which the can is held has been developed by the American Can Company for toothpaste and other items, according to Robert Hollister, the company's assistant national sales manager in charge of pressure cans. The company also is perfecting a pressure can that will satisfactorily hold and dispense liquid shampoo, a heretofore hard-to-hold product in metal containers.

It's slim . . . feminine . . . ideal for cosmetics!

It's Canco's 8-oz. "Queen Size" pressure container!

Any woman will appreciate this slim, graceful, easy-to-hold container. That's why it's perfect for cosmetics—hair sprays, lotions, creams and many others.

The "Queen Size" container is available with Canco's one-inch cup opening top, or an individually styled one-piece top. Either will accommodate a variety of valves and both are adaptable to all filling and closing equipment.

The Canco representative will gladly tell you more about this well-designed pressure container and others in Canco's line—the most complete line in the industry. Give him a call!

How Canco saves you up to 35% on your packaging costs

- Canco containers cost less initially, because they're mass-produced on standard can-making equipment.
- Canco offers all popular sizes: 3-oz., 4-oz., 6-oz., 8-oz., 12-oz., 14-oz., and 16-oz. Available with cup tops, *or with one-piece tops which simplify packing, cut costs.*
- Canco works directly with valve makers and contract loaders to give you the most efficient package at lowest cost.
- Canco's many plants assure you prompt service, uninterrupted production schedules.

COME TO CANCO FIRST! *American Can Company* *New York · Chicago · San Francisco*

GENUINE GOLD... the classic symbol of elegance and refined taste... can be applied like any ceramic label or decoration... at a cost only slightly higher than common color. Screen printed on glass or ceramic surfaces, permanently fired to resist abrasion and corrosion, Hanovia 22 Karat liquid gold adds th vital "extra" to

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Taxable and Nontaxable Cosmetics

The Internal Revenue Service has published Revenue Ruling 58-38 in which, for the first time, there is made a serious effort by the Government to publicize a list of toilet preparations which are considered taxable and a list which it considers nontaxable. Following are the lists, preceded by an Internal Revenue Service statement (italics by the Toilet Goods Association):

"Section 320.50(a) of Regulations 51, made applicable to the 1954 Code by Treasury Decision 6091, C.B. 1954-2, 47, provides that the tax applies to the sale by the retailer of the articles enumerated above and similar articles commonly or commercially known as toilet articles, which are used or applied, or intended to be used or applied, for toilet purposes. *Any article advertised or held out for toilet purposes, or for any purpose for which the articles enumerated in the law are customarily used, will be subject to the tax regardless of the name by which it may be known or distinguished.* The tax attaches to the sale by the retailer of any preparation which is used or applied or intended to be used or applied for toilet purposes or used in connection with the bath or care of the body, or applied to the clothing as a perfume or to the body as a toilet article. *The fact that any particular product, preparation, or substance coming within the scope of the law may have, or be held out to have, a medicinal, stimulating, remedial, or curative value does not exempt it from the tax, if it is used, or held out for use, as an adjunct to the toilet or for toilet purposes.*

"Under the provisions of section 4022 of the Code, the tax on toilet preparations shall not apply to lotion, oil, powder, or other article intended to be used or applied only in the care of babies. Section 320.50(c) of the regulations provides that the determination of whether toilet articles are intended to be used or applied only in the care of babies will be made only by reference to the advertising with respect to, and the labeling contained on, the article. If an article is advertised and labeled as being for use in the care of babies and is not advertised or labeled as usable by persons other than babies the article is exempt from tax even though the particular purchaser buys it for adult use. On the other hand, *an article which is represented by advertising or labeling as fit for adult use, in addition to use in the care of babies, will not be exempt from tax even though sold to a purchaser who intends to use the article only in the care of babies.*

"There are listed below articles which the Internal Revenue Service has held to be toilet articles or preparations subject to tax when sold at retail. There are also listed articles which the Service has held not to be toilet articles or preparations within the meaning of the statute and therefore not subject to tax. The articles or preparations included in these lists should be considered *illustrative* instead of *all-inclusive.*"

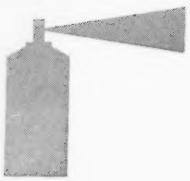
TAXABLE

After shave creams, lotions, or powders.
Almond meal and paste.
Anti-perspirants.
Aromatic cachous (Sen-Sen).
Astringents (after shave, anti-perspirants, etc.)
Atomizers containing perfume and other taxable liquids.

Bandoline.
Bath crystals.
Bath milks.
Bath oils.
Bath powders.
Bath salts.
Bath tablets.
Bay rum.
Beauty creams, mask preparations, etc.
Bleach creams and lotions (including freckle remover).
Body powders (unless advertised or labeled for use in care of babies only).
Bouquet liquids.
Breath sweeteners (except candy, chewing gum, Chlorophyll tablets and lozenges).
Brilliantines.
Bubble bath preparations.

Cleansing creams and lotions (including those for removing stains from the skin).
Cocoa butter (if advertised or labeled for toilet purposes).
Cold creams.
Colognes.
Compacts containing rouge or powder.
Compact refills.
Cosmetics.
Cosmetic stocking preparations.
Cuticle softeners and removers.
Deodorants (even though having a medicinal or curative value, if advertised or labeled for use as a body deodorant).
Deodorants (for use in closets, bureau drawers, etc., for imparting fragrance to clothing).
Depilatories (except of the abrasive or mechanical type).
Dusting powders (unless advertised or labeled for

(*Continued on page 398*)



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Aerosol packaging with

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Aerosol packaging creates new popularity . . . and new sales . . . for pharmaceutical products. Spray-on bandages, pressurized ointments, aerosol antiseptics, bronchial and nasal sprays are typical of the pharmaceuticals that have taken advantage of this modern packaging technique through ISOTRON propellents.

High-quality ISOTRON propellents meet exacting requirements for pressure, stability, solubility and particle size. ISOTRONS are nontoxic, nonflammable, noncorrosive. They're backed by over 40 years of *specialized* Pennsalt research in fluorine, the chemical that gives propellents their stability.

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Chicago, Ill.

Aerosol Industries Div. Zenith Drug
Newark, N.J.

Aerosol Techniques, Inc.
Bridgeport, Conn.

Airosol Company, Inc.
Neodesha, Kansas

Allied Professional Associates Ltd.
Buffalo, N.Y.

Armstrong Laboratories
Boston, Mass.

Associated Brands Inc.
Brooklyn, N.Y.

G. Barr and Co.
Chicago, N.Y., Los Angeles

Capitol Packaging Co.
Forest Park, Ill.

Connecticut Chemical Research Corp.
Bridgeport, Conn.

Continental Filling Corp.
Danville, Ill.

Eveready Pressurized Products
Cleveland, Ohio

Fluid Chemical Company, Inc.
Newark, N.J.

Fuld Brothers Inc.
Baltimore, Md.

La Maur, Inc.
Minneapolis, Minn.

Larsons Laboratories
Erie, Pa.

National Spray Can Filling Corp.
Brooklyn, N.Y.

Oid Empire, Inc.
Newark, N.J.

Peterson Filling and Packaging Co.
Danville, Ill.

Powr-Pak Inc.
Bridgeport, Conn.

Puritan Distributors Co.
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Regal Chemical Corp.
Brooklyn, N.Y.

Eugene Rose Company
Chicago, Illinois

John C. Stalfort and Sons
Baltimore, Md.

Sun-Lac Inc.
Newark, N.J.

Texas Aerosols, Inc.
Houston, Texas

Thomasson of Pa., Inc.
Norristown, Pa.

Western Filling Corp.
Los Angeles, Cal.

ISOTRON—The Key to Modern Living

Patent thoughts and trends

By THOMAS CIFELLI, JR., PATENT ATTORNEY*

Oppositions to Grant of U.S. Patents—Good or Bad?

At the outset we should explain what is meant by the title. At present, patent applications in the U.S.A. are kept in strictest secrecy and therefore the first time that the general public learns of the existence of a patent is *after* it is granted. In some countries, notably Great Britain and Germany, patent *applications* are published after the patent offices of the respective countries are satisfied that a patent should issue. Then, after publication, any interested party has a specified period of time within which to oppose the grant of the patent. Such procedure is what we mean by the term "oppositions."

This is by no means the first time the title question was raised. As a mater of fact, numerous proposals by highly regarded groups recommending the establishment of an opposition procedure in the U. S. have been made. Among these proposals were those of the 1935 Bush Committee of the President's Science Advisory Board and the 1943 National Patent Planning Commission. So far, however, the proponents of the opposition idea have not been able to obtain congressional approval, which is necessary before oppositions can become part of our patent system.

The present time seems as good a time as any to take a look into this question, for a number of reasons. For one thing, it has been the writer's observation that the number of proposals for changing the U. S. patent laws seems to vary inversely with the economic situation in the country, the poorer the economic situation the more proposals to change the patent system there are. Then again, the writer has often been asked about this question by readers of This Journal and perhaps should be taken to task for not having treated this subject in these columns long before this. Recently, Zentner has looked into this question with regard to how oppositions have worked out in certain English speaking countries; and the writer has drawn heavily from Zentner's report for this article.

Arguments in Favor of Oppositions

The main arguments in favor of opposition procedures are that they would strengthen the presumption of validity of patents and the public would be better protected against the issuance of invalid patents than is presently the case.

The word "presumption" deserves consideration. The legal meaning of this word is that, as applied to patents, they are considered to be valid unless proved to be invalid. While the courts still apply this presumption to U. S. patents as a matter of law, as a matter of fact the presumption is so weak that a large percentage of patents is invalidated.

Perhaps, another point to note now is that the strengthening of the presumption of the validity of patents would not necessarily protect the public against the issuance of invalid patents, and vice-versa. For example, if the courts were to strengthen the presumption as presently applied, that would not necessarily mean that invalid patents would not continue to be issued. It would simply mean that those patents which might be considered border-line cases probably will receive better treatment in the courts; but the patents which are clearly invalid would still continue to be held invalid.

Some data submitted to the Subcommittee on Patents, Trademarks and Copyrights of the Senate Committee on the Judiciary show that patents do receive rather rough treatment in the hands of the Federal courts. In considering these data, which are given below as Table 1 and Table 2, it should of course be borne in mind that there are many patents which are recognized by industry and under which substantial royalties are paid; and these patents do not normally become involved in litigation.

Table I
Patents Invalidated in Federal Courts, 1948-1954

Year	No. of Patents	Per cent Invalid
United States District Courts—Published Decisions 1948-1954		
1948	99	36.4
1949	112	52.7
1950	100	33.0
1951	105	61.9
1952	112	62.5
1953	87	65.5
1954	78	55.1
Total	693	52.4
United States Courts of Appeals, 1948-1954		
1948	51	60.8
1949	62	64.5
1950	78	48.7
1951	69	58.0
1952	58	69.0
1953	77	63.6
1954	54	68.5
Total	449	61.2

Table II
Patents Invalidated in Federal Courts, 1925-1954

Year	No. of Patents	Per cent Invalidated
United States Courts of Appeals		
1925-1929	649	33.4
1930-1934	719	38.0
1935-1939	803	50.9
1940-1944	602	60.5
1945-1949	262	64.5
1950-1954	336	60.7
United States Supreme Court		
1925-1929	7	57.2
1930-1934	18	77.7

*Richards and Cifelli, Newark, New Jersey

A PACKAGING TEAM NEEDS

The package can determine the success of a product. And so important has the packaging factor become that more and more companies are making packaging decisions through *teamwork*. Specialists from various departments offer their know-how and experience. But to make a packaging team complete, it needs an outside viewpoint. It needs an Anchor Man.

The Anchor Man knows glass packaging. He's helped solve hundreds of tough packaging problems. Through this wide experience, he can help you solve yours, too.

He offers a complete line of Anchorglass® containers—amber, crystal and green—in all standard sizes and styles. The quality of these containers is safeguarded by hundreds of daily checks, tests

AN ANCHOR MAN!

and controls. You get the same high quality standards in the complete line of Anchor® metal and molded closures. And you get container-closure combinations that are best for you in every way.

Contact your Anchor Man. We know you'll want him on your team, too. Anchor Hocking Glass Corporation, Lancaster, Ohio. Branch offices in all principal cities.

ANCHOR HOCKING
Glass Containers and Closures

1935-1939	33	60.5
1940-1944	20	50.0
1945-1949	13	53.9
1950-1954	2	100.0

The figures in the tables indicated that once a patent becomes involved in litigation the chances of sustaining it are less than 50-50.

The Effect of Opposition on the Presumption of Validity of British and Australian Patents

Briefly, Zentner's study of the history of oppositions in Great Britain and Australia led to the conclusion that the fact that a patent has survived opposition proceedings does not affect, one way or the other, its standing in court. This conclusion was actually confirmed by the assistant comptroller of the British Patent Office who stated "That the fact that an application for a patent has or has not been the subject of opposition in this Office has no relevance in subsequent litigation on the patent."

Possible Effects of Opposition on U.S. Patents

With regard to the question of whether oppositions would strengthen the presumption of validity of U.S. patents, the strongest evidence available (i.e. the British and Australian experience) would appear to indicate that no such strengthened presumption would result. With regard to the question of whether opposition proceedings in the United States would decrease the number of invalid patents issued by the U.S. Patent Office, there appears to be very little doubt of the answer to this question, which answer is definitely in the affirmative. The nature of opposition is such that those active in a given art would watch the applications which are published in their field and would furnish the Patent Office Examiners with the information that the experts have, which information might not be available, or, which is often the case, not found by the Examiner in the limited time that he had to make his search.

There is of course one great danger inherent in the opposition procedure. That danger lies in the possibility that the larger, financially powerful companies might make such frequent use of the opposition procedure as to block the issuance of patents to individuals and small companies. As matters now stand, the expenses involved in obtaining U.S. patents often are rather substantial. It is obvious that any opposition procedure would only increase such expenses and the added financial burden might be such as to discourage inventors of small financial means. Consequently, the possibility exists that *valid* patents as well as invalid patents will be cut off by the opposition procedure.

However, the fear may be greater than the fact, in this connection. According to a study made by one of the outstanding patent scholars in the U.S.A., only 1.1 per cent of applications filed in 1950-1954 were opposed in Great Britain.

Conclusions

The reader is left to draw his own conclusion as to the desirability of oppositions in the U.S. patent practice. It is the writer's feeling that a simple opposition procedure having adequate safeguards against misuse by financially powerful interests might be a boon to the U.S. patent system. It is felt that in addition to the unquestioned result of reducing the number of invalid patents issued, opposition procedures may have the additional effect of strengthening the presumption of validity, in spite of the British and Australian experience. Once the Federal courts in the U.S.A. become convinced that every patent brought before them has been scrutinized not only by the U.S. Patent Office but by the industry directly concerned, it is felt that the status or prestige, if you will, of U.S. patents will be benefited materially, with resultant holdings of validity in a higher percentage of cases than is true at present.

Transparent Toilet Soaps

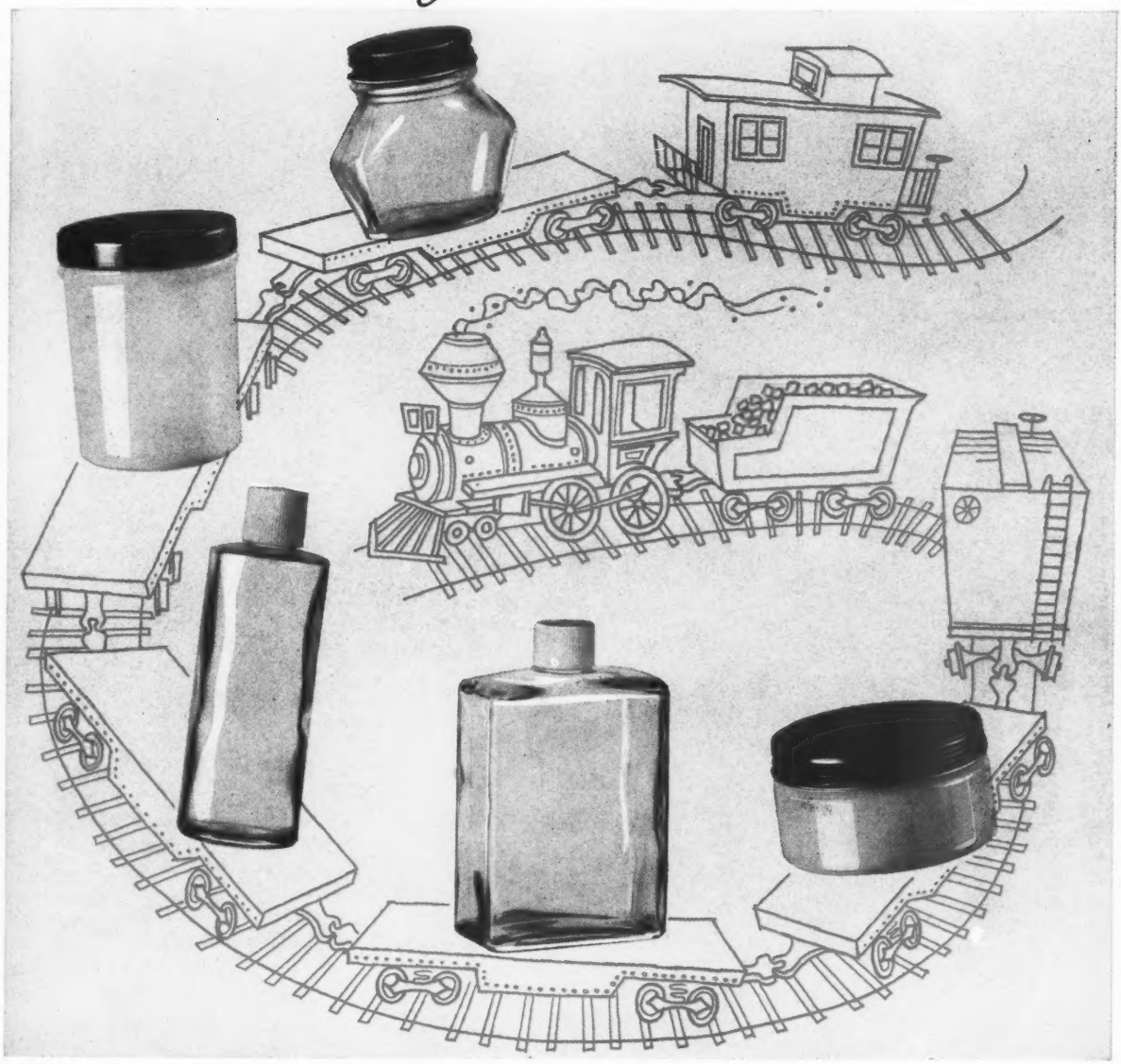
An interesting patent in the soap field was issued to Fromont, a Belgian, recently. This patent, U.S. 2,820,768, deals with a soap which has among its asserted properties the characteristic of being capable of neutralizing a substantial quantity of an acid and of a base without its foaming power and its pH being affected. According to the inventor, his novel solid soaps avoid the detrimental effects of conventional soaps which are conducive to shrivelling and wrinkling the skin and matting and soaping the hair. Also, the formation of insoluble soaps which deposit on the part of the skin that is being washed when conventional soaps are applied is avoided by the Fromont soap, according to the patent. Furthermore, the alleged irritating effect of lower molecular weight fatty acid soaps, such as cocoanut soaps, owing to the penetrative power of their molecules into pores and between cellular sheets is also avoided by the patented soap.

In the words of the inventor "a soap with advantageous properties can be obtained by mixing a transparent alkali metal soap with the product of the reaction of a soap-forming fatty acid having no less than 18 carbon atoms with triethanolamine in excess, that is more triethanolamine than required to fully neutralize said fatty acid in form of a salt thereof, the proportions of ingredients and the reacting conditions being controlled to obtain a hard, transparent, substantially non-alkaline soap. To produce a mixed soap having the characteristics above mentioned, it is essential that the proportion of triethanolamine employed should be no less than two mols, but no more than three mols per mol of soap-forming fatty acid, the preferred ration of triethanolamine to fatty acid being 2.5 mols of triethanolamine to one mol of fatty acid.

"According to this invention, therefore, I provide a mixed, hard, transparent soap comprising essentially a transparent alkali metal soap, a triethanolammonium salt of a soap-forming fatty acid having no less than 18 carbon atoms, and an excess quantity of triethanolamine equal to at least the stoichiometric quantity of triethanolamine combined with said fatty acid in form of a salt thereof and to at most twice said stoichiometric quantity, said mixed soap having a pH value of approximately 7.5 in 10 per cent aqueous solution and being capable of neutralizing a substantial quantity of an acid and of a substantial quantity of an acid and of a base without its foaming power and its pH being affected.

(Continued on page 402)

...glamour in glass!



...rolling stock

Beautiful opal and flint H-A *Stock* Containers really roll—helping move your products from display to the consumer. H-A Opal jars are straight, light—strong, white. They hide air-pockets, and are straight-sided for easy filling. And permanent "Deco-fired" labels can be economically applied at the time of manufacture. *Give your products a very special appeal*—**call or write H-A now.**

HAZEL-ATLAS GLASS division of CONTINENTAL CAN COMPANY

WHEELING, WEST VIRGINIA

NEWS...

Funds Allocated to Bristol For Cancer Drugs Research

Bristol Laboratories has been awarded government contracts expected to total $870,000 over a three-year period for development of improved anti-cancer screening techniques and production of potential anti-tumor substances. The contracts were awarded by the National Institutes of Health, U. S. Public Health Service.

Expenditures the first year will total $410,000, of which $230,000 is to be used for devising faster and more accurate methods of screening compounds for detecting anti-cancer activity.

Coneybear in New Post

Savery F. Coneybear has been appointed to the newly created position of director of new products development of the Colgate-Palmolive Company, according to Dr. John R. Brown Jr., vice-president of research and development. Mr. Coneybear was formerly a director of research in the company's research and development department.

Mr. Coneybear will now be responsible for receiving and evaluating new product ideas from within and outside the company, and for encouraging individual inventors and companies to submit products, processes and developments available for commercialization.

SAVERY F. CONEYBEAR

Merck Director of Prof. Rel.

Dr. Frederick K. Heath has been appointed to the newly created post of director of professional relations at Merck & Co., Inc., according to John J. Horan, corporate public relations director.

Dr. Heath will be responsible on a company-wide basis for all public relations activities directed to the medical profession. He will be located at the Merck Sharp & Dohme Division. Initially he will be concerned with efforts to assay the opinion the general practitioner holds with respect to the pharmaceutical industry with a view to determining factors affecting such judgment.

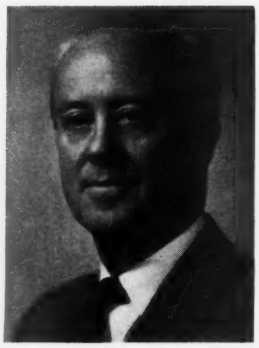
Before joining Merck in 1953, Dr. Heath served in the Army Medical Corps with the rank of major, was engaged in private practice and associated with Presbyterian Hospital in New York City. He was certified

DR. FREDERICK K. HEATH

by the American Board of Internal Medicine in 1945. Dr. Heath's previous position with Merck & Co., Inc. was that of senior staff physician in medical research in the Merck Sharp & Dohme Research Laboratories Division.

Antoine Chiris Vice-Pres.

Robert Mendoza, sales manager of Antoine Chiris Company, Inc., has been appointed vice-president, according to an announcement by F. E. Shoninger, president of Chiris. With the firm since 1946, Mr. Mendoza worked several years in the manufacturing and research perfumery departments before becoming sales manager. He will continue to administer sales in addition to his new duties as vice-president.



JOSEPH A. WIESNER

National Brands Plant Mgr.

Joseph A. Wiesner has been appointed plant manager of the National Brands Division, succeeding the late Jack T. Priestley. Before taking over as Monticello, Ill., plant manager, Mr. Wiesner was administrative assistant to the plant manager of Winthrop Laboratories.

DCAT Annual Dinner

Philip Lovejoy, former general secretary of Rotary International, was the principal speaker at the thirty-second annual dinner of the Drug, Chemical & Allied Trades Section of the New York Board of Trade, held Mar. 6, at the Waldorf-Astoria.

Some 2,500 DCAT members and guests heard Mr. Lovejoy discuss "The Human Factor in Industry". A well-known author in education and public school relations, he has delivered an estimated 760 public addresses in the last five years in all parts of the United States and in many foreign countries. He served as an advisor to the United States delegation in the drafting of the United Nations charter at San Francisco.

William W. Huisking, vice-president of Chas. L. Huisking & Co., Inc., was general chairman and toastmaster of the dinner.

Carter Is Ames Vice-Pres.

Dr. Kenneth Carter was elected to the newly created position of vice-president—research and medical affairs, at a recent meeting of the Ames board of directors. Dr. Carter joined Ames in February, 1957, at which time he moved his family from England, where he was medical director and director of development research of Smith, Kline and French International Co.

Whatever your surface active agent requirements, Ultra can meet them with products that combine uniformly high quality with economy. Technical service is readily available on your surfactant problems.

Whatever your surfactant needs, you can't buy better than Ultra...and you can combine all Ultra products to benefit from quantity prices.

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ULTRA CHEMICAL WORKS

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Aerosol perfumes and colognes

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Keeley "BIM of the Year"

"BIM of the Year" is C. R. "Bud" Keeley, advertising manager of Beauty Fashion Magazine, who received the award, an engraved silver tray, Feb. 11 at the New York Athletic Club, where 283 members and guests gathered for the 26th annual dinner of the BIMS.

Small silver trays were presented to former holders of the "BIM of the Year" title, and these included John Rau, Fred Webster, William Green, Lee Simmons, Wally Nucklos and Ralph Schisler. Dr. Everett McDonough, winner of last year's Martin Schultes' Memorial Trophy, presented the cup to this year's winner, Roy Gibson. Honorary life membership was awarded to Joseph Huisking and Blaine Walker.

Golf tournament dates for 1958 were announced: June 19, Baltusrol Country Club, Baltusrol, N. J.; July 22, Winged Foot, Mamaroneck, N. Y.; Aug. 19, Nassau Country Club, L. I., N. Y.; Sept. 9, Wykagyl, New Rochelle, N. Y.

C. R. "BUD" KEELEY

Emulsol Sales Representative

T. William Mather has joined the sales staff of Emulsol Chemical Corporation and will make his headquarters at the firm's Akron sales office. His territory includes Ohio, western Pennsylvania, upper New York State, West Virginia and eastern Kentucky.

Dow Sales Office in Dallas

The Dow Chemical Company has opened a new sales office in the Dallas Federal Building, 1505 Elm Street, Dallas. Donald P. Camp, former head of chemicals sales with the company's Houston office, has been appointed manager.

Dr. James L. Tullis, right, associate director of the Protein Foundation, Inc., receives plaque for outstanding glycerine research in 1957 from E. Scott Pattison, manager of the Glycerine Producers' Association. Dr. Tullis, who also received a cash award of $1,000, developed a practical method for the long term preservation of red blood cells at temperatures of −80°C. and −120°C. Using a 40 per cent glycerine solution as the preservative, frozen cells have been stored as long as 20 months, thawed, deglycerolized and infused into patients undergoing various medical and surgical treatments, without any detectable damage to the cells. Current practice limits storage periods of plasma to twenty-one days due to deterioration of cells after that period.

Roche Clinical Investigator

Dr. William P. Chapman has joined Hoffmann-La Roche Inc. as an assistant director of clinical investigation, it has been announced by Dr. V. D. Mattia Jr., director of medical research.

Dr. Chapman, most recently associated with the department of medicine of the Massachusetts General Hospital and Harvard Medical College, has been engaged in clinical investigation since 1940. His fields of investigation have been the mechanism of pain, the cardiovascular system and the central nervous system.

Howard S. Tierney Jr., left, president of The Denver Chemical Mfg., Co., welcomes George Guess on his appointment as general manager of Wampole Laboratories and vice-president of Denver Chemical, parent company to Wampole.

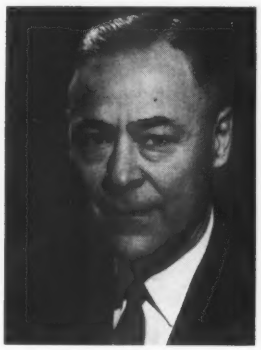
Breon Sales Product Mgrs.

R. S. Bunning has been appointed product manager of George A. Breon & Company and will be responsible for Breon sales and promotional programs under the supervision of Charles L. Czermak, vice-president in charge of sales.

Eugene J. McGlynn has been named manager of the Diaparene line. Joseph P. Dougherty, formerly sales manager of Homemakers Products, has been appointed sales training manager and trade exhibits director for Breon. William Casteel has been named to the new post of trade relations manager, servicing drug wholesalers and retailers.

Lilly Appoints Klingaman

Ivan J. Klingaman, director of Eli Lilly and Company's purchasing division for the last four years, has been named to a newly created post as executive director of purchasing.



I. J. KLINGAMAN

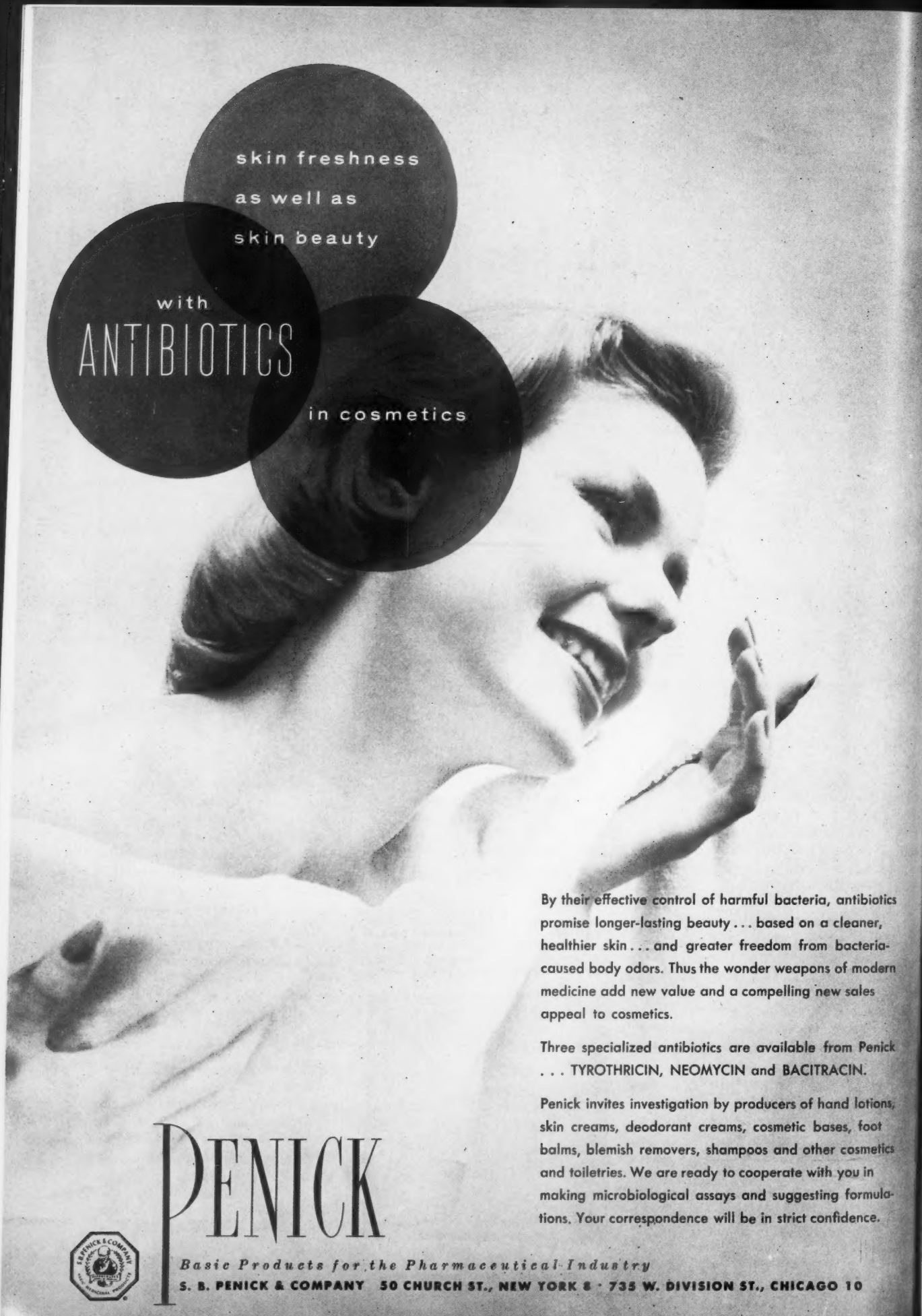
P-M Building Research Center

Pitman-Moore is building a new research center northwest of Indianapolis. According to company engineers, the windowless, completely air conditioned, single story brick exterior building will be the first such unit in the drug industry. Dr. Francis Chilson, industrial consultant to the drug and cosmetic industry, assisted in the design and planning of the new research building.

Shulton Int. Sales Prom. Mgr.

James J. McNamara has been appointed sales promotion manager of the International Division of Shulton, Inc., it has been announced by David Gregg Jr., manager of the division.

Prior to joining Shulton, Inc., Mr. McNamara was merchandising manager for Avon Cosmetics S. A.



By their effective control of harmful bacteria, antibiotics promise longer-lasting beauty . . . based on a cleaner, healthier skin . . . and greater freedom from bacteria-caused body odors. Thus the wonder weapons of modern medicine add new value and a compelling new sales appeal to cosmetics.

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Penick invites investigation by producers of hand lotions, skin creams, deodorant creams, cosmetic bases, foot balms, blemish removers, shampoos and other cosmetics and toiletries. We are ready to cooperate with you in making microbiological assays and suggesting formulations. Your correspondence will be in strict confidence.

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Roche Executive Changes

The board of directors of Hoffmann-La Roche Inc. has approved a realignment of executive personnel, it has been announced by L. D. Barney, president.

Nelson F. Peterson, executive vice-president, has been elected senior vice-president. Robert A. Hardt, vice-president, has been elected executive vice-president for marketing in which position he will direct the sales and advertising policies of all divisions, including Roche Laboratories, Vitamin Division, Animal Nutrition Division, Aromatics Division and Montclair Laboratories.

Dr. Raeto Schett has been elected vice-president of the technical department. He succeeds Dr. A. J. Frey, who has retired and will do consulting work in chemical engineering. Dr. Schett also was elected to the board of directors and executive committee. He has been assistant to Dr. Frey since May, 1956. Prior to this, he was vice-director for F. Hoffmann-La Roche & Co., Inc. in Basle, Switzerland.

Donald A. Brisbane, treasurer, has been elected financial vice-president. Paul J. Cardinal, vice-president of the Vitamin Division, has been elected vice-president in charge of industrial relations and assistant secretary. Oscar A. Zeitz has been promoted from assistant treasurer to treasurer.

Robert W. Smith has been promoted from sales manager, Vitamin Division, to general manager of that division. James P. McKenna has been promoted from assistant controller to controller. W. D. Van Doren has been appointed secretary to the executive committee.

Officers and directors of The Fragrance Foundation and their guests attend membership meeting at New York's Savoy-Plaza Hotel, where H. Gregory Thomas, president of the foundation, announced the appointment of Hill and Knowlton, Inc. as public relations counsel for the foundation. Left to right: Charles Ligne, past president of the Canadian Toilet Goods Manufacturers Association, guest; S. L. Mayham, director; Pierre Harang, vice-president; Bernard d'Escayrac, vice-president; David Penn, director of Hill and Knowlton International, guest; Mr. Thomas; Jean Despres, director; Joseph A. Danilek, treasurer; Frazer V. Sinclair, vice-president; and Charles Granville, director.

Lady Esther President

Vincent P. Brunelli has been elected president of the Lady Esther Division, Chemway Corporation, it was announced by Charles T. Silloway, president of Chemway.

Mr. Brunelli, who is vice president of Chemway and president of the Household Products Division, will continue in these posts in addition to his new assignment as president of Lady Esther.

Mr. Silloway also announced Lady Esther would transfer its sales and advertising departments from Chicago to Chemway's new headquarters in Wayne, N. J.

Stokes Moves Toronto HQ

F. J. Stokes Company of Canada, Ltd., Canadian subsidiary of F. J. Stokes Corporation, Philadelphia, has moved its Toronto headquarters to 4198 Dundas Street West. Telephone: Belmont 2-2301.

Guenther Lectures in London

Dr. Ernest Guenther, vice-president and technical director of Fritzsche Brothers, Inc., delivered two lectures before the British Aromatic Compound Manufacturers' Association Feb. 13 in the Assembly Hall of the Royal Empire Society, London.

His first talk, accompanied by colored slides and films, was delivered in the afternoon and embraced the California citrus industry, peppermint production in Oregon, Mexican lime oil and West Indies nutmeg, ginger, pimenta and citrus production. That same evening he presented films taken during his recently completed African essential oil survey. These included visits to the Belgian Congo, Nossi Be and the Comoro Islands, Madagascar, Reunion Island, Rhodesia, South Africa, Zanzibar and Pemba, Tanganyika and Kenya Colony. Production of the various oils originating in these areas was shown. Included were oils of lemongrass, vetiver, geranium, eucalyptus, ylang ylang, pepper, clove, citrus oils and vanilla beans.

From England, Dr. Guenther visited Belgium, France and Germany, returning to New York this month in time to attend the annual D.C.A.T. Meeting.

Rexall Drug Vice-Pres.

R. J. Drews has been appointed vice-president—staff administration, Justin Dart, president of Rexall Drug Company, has announced.

Architectural plan of a 37,000 square foot laboratory where Geigy Pharmaceuticals will conduct basic research. The new building will include synthetic organic and pharmacologic laboratories, a biochemistry department and will have a staff of about 100 scientists.

Vitamins in Pharmaceuticals

A REPORT

Use of Biotin in Multivitamin Formulae

Biotin, now firmly established as an important member of the vitamin B complex, belongs in multivitamin formulae and dietary supplements for the reasons given below.

D-biotin is required for the growth of many organisms: animals, plants, bacteria. It appears to be related to the process of cell development. Symptoms of deficiency have been shown to occur in human beings who live on diets high in raw egg white.

Deficiency symptoms appear as severe dermatitis lesions, similar to seborrheic dermatitis and a desquamating disease of infants called Leiner's disease. These symptoms, when due to a deficiency of biotin, disappear after its administration. In animals, dermatitis, loss of hair, cessation of growth of the young and sudden death of the adults may occur.

Nearly 200 papers directly related to biotin research are in the literature. The work of investigation continues.

The evidence now available points to the need for biotin in multivitamin and dietary supplements which, by their very nature, are prescribed for therapeutic and prophylactic effect.

The Place of Biotin in Antibiotic Therapy

Rat feeding experiments using some of the sulfonamides show that the animals develop biotin deficiency. The same result has been found and reported from the use of antibiotics. It has been assumed that the same development might occur in man when this therapy is used. Under the circumstances, biotin should be included in stress formulae and in multivitamin supplements which are prescribed so often during and after the administration of these modern drugs.

Usage in Veterinary Medicine

In dogs and dairy calves it has been found that a deficiency of biotin will cause a paralysis of the hind quarters. This condition was cured by the administration of the vitamin. In chicks and turkey poults a biotin deficiency, represented by a dermatitis of the feet, may be overcome by the use of biotin in the feeding formula. A substantial increase in hatchability was found when hens were fed a ration known to be rich in d-biotin.

This evidence indicates that biotin has a definite place in veterinary medicine and animal nutrition.

Technical Data

Empirical Formula ..... $C_{10}H_{16}O_3N_2S$

Molecular Weight 244.3

Slightly soluble in water and 95% alcohol. Insoluble in ether, acetone and ethyl acetate. Soluble in d-panthenol.

Thermostable in dry crystalline form.

Not sensitive to light.

Not affected by reducing agents that may be present in polyvitamin and other pharmaceutical preparations.

The brilliant Roche synthesis of 1946 makes biotin readily available in pure form at a relatively modest cost.

Roche, a world leader in vitamin research and production, has a wealth of information about biotin. Skilled technical people are ready to help you incorporate biotin Roche in your preparations.

New Edition of Brochure

Send now for your personal copy of the Roche technical brochure about d-biotin. Second edition is now available, complete with survey of recent literature and up-to-date bibliography. Ask your Roche salesman or write the Vitamin Division, without obligation.

"Vitamins in Pharmaceuticals" reports are published from time to time by

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DR. CHARLES H. SCHRAMM

J. T. Baker Dir. of Research

Dr. Charles H. Schramm has been appointed director of research for the J. T. Baker Chemical Co., according to Dr. J. R. Stevens, executive vice-president.

Dr. Schramm, an organic chemist, was a member of the Manhattan Project at the Massachusetts Institute of Technology from 1944 to 1947. Prior to joining the Baker staff, Dr. Schramm was with the Research Laboratories of Lever Brothers where he directed the organic chemical research section.

Purdue Frederick Buys Blair

The Purdue Frederick Company has acquired control of Blair Laboratories, Inc., which becomes a subsidiary company but will continue to market drug products under its own label. Policy decisions and top management matters will be directed by the parent firm.

The subsidiary will relocate from its Short Hills, N. J. offices to the Purdue Frederick building at 135 Christopher St., New York. Theodore D. Preston, executive vice-president of Blair will continue in his position.

Stepan Moves Offices, Labs

The Stepan Chemical Company general offices, formerly located at 20 North Wacker Drive, Chicago, have been moved to larger quarters at 427 West Randolph Street, Chicago. Recently purchased by Stepan, Ninol Laboratories, Inc., whose general offices were located at Prudential Plaza, Chicago, are also being moved to the new address. The research and development laboratories of both Stepan and Ninol will be consolidated and located at the new Randolph Street address.

"Dry Materials Division" Executives Named by D&O

Dodge & Olcott, Inc. has announced executive appointments for its Dry Materials Division, the new name of the firm's Hawthorne, N. J. plant, which was formerly called the Dry Solubles Division. Director of the plant is William F. Ammon; assistant director, Bryan J. McCabe; chief chemist, Robert T. Maleeny; plant manager, William D. Rosenberger.

Previously manufacturing dry soluble flavors and seasonings only, the plant recently was enlarged to include processing of spray dried flavors, seasonings and perfumes.

Emery Fatty Acid Rep.

Malcolm R. Tucker has been appointed fatty acid sales representative by Emery Industries, Inc., for the Cincinnati territory, G. W. Boyd has announced.

MALCOLM R. TUCKER

At ribbon-cutting ceremonies of the Los Angeles distribution center of Merck & Co., Inc. are, left to right: George B. Gose, president of the Los Angeles Chamber of Commerce; William F. McCann, executive assistant to Los Angeles' Mayor Poulson; and Charles B. Pyle, director of sales and marketing of the Merck Sharp & Dohme division of Merck & Co., Inc.

ROBERT B. KING

Colton Chicago Sales Engr.

Robert B. King has been appointed a sales engineer in the Chicago District Office of the Arthur Colton Company, W. A. Doepel, sales manager, has announced.

Mr. King will handle sales of Colton high-speed rotary tabletting equipment, filling machines, tablet press punches and dies and allied production equipment. The Colton Chicago sales area includes Minnesota, Wisconsin, Iowa, Indiana, Illinois, St. Louis and Lousiville, Ky.

Honor Five Abbott Scientists

Awards for scientific achievement and service were presented to five scientists of Abbott Research, Development, and Control Divisions at a meeting in the Edgewater Beach Hotel, Chicago.

Dr. Kenneth J. Frederick, head of the physical chemistry department, was cited for his organization of the physical research laboratory at Abbott and the development of its staff. Mrs. Alma W. Goldstein received the award for her work in the isolation and screening of micoorganisms that produce new antibiotics. She is a microbiologist in microbiologic research.

William A. Lennox, assistant manager of control laboratories, was cited for his application of modern analytical instruments and electronics to the development of control tests. A group leader in isolation and screening, Thomas J. Oliver was cited for his contributions to microbial assays, fermentations, and antibiotics. Dr. P. Robert Rasanen received the award for his work on sterile products in pharmaceutical research and for his work as a section manager in the development laboratories.

Creative Perfumer

Production

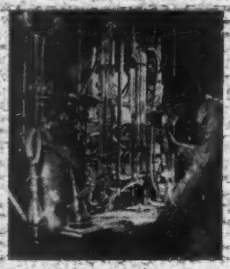
Perfume Evaluation Board

Aromatic Production

Sales

Cosmetic Research

Chemical Engineering



Aromatic
Chemical Research

Quality Control

People...

THE IMPORTANT INGREDIENT

The success of your perfume is the result of the abilities of the many creative, technical and service *people,* who have a part in the creation and production of the perfume itself.

VAH Perfume Evaluation Board ... Unmatched in their ability, these professionals screen every perfume sample on the basis of its intrinsic beauty as a fragrance, its adaptability to a specific market, its potential level of consumer acceptance, its relationship to both competitive and companion items... Not the opinion of an amateur panel, but the recommendation of this experienced *board of experts* goes with every perfume sample submitted by VAH.

A perfume by VAH has all the ingredients for beauty and success.

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The Philadelphia Drug Exchange honors its past presidents at a dinner meeting marking the start of the group's 97th year. Sitting in front row, left to right: R. G. Anderson, A. B. Collins, Paul S. Pittenger, E. F. Schafer, and J. Mervin Rosenberger. Standing in back row, left to right: Richard L. Durst, Walter P. Miller, Jr., Malcolm Cox, J. Mahlon Buck and Robert L. McNeil, Jr., current president of the exchange.

Crouch with Fritzsche 25 yrs.

Stanley Crouch, manager of the Fritzsche Brothers, Inc., Los Angeles office celebrated his 25th anniversary with the firm on Feb. 11 at a private dinner party given him by the company in Los Angeles. Mr. Crouch was presented with a Government bond from the officers and directors, and a scroll in recognition of his membership in the Fritzsche Quarter-of-a-Century Club, which to date has 71 members.

Prior to his twenty-five years with Fritzsche, Mr. Crouch represented the St. Louis firm of Barada & Page which then handled the Fritzsche line in that territory.

Taylor in FMC Sales Post

Bert S. Taylor, vice-president of the FMC Organic Chemicals Division of Food Machinery and Chemical Corporation, has been named director of marketing and purchasing, it has been announced by Henry S. Winnicki, president of the division. Mr. Taylor will be responsible for all sales and purchasing activities for the FMC Organic Chemicals Division. His headquarters is in New York City.

Assigned by Firmenich

Robert E. Horrobin, formerly assistant manager of the Chicago office of Firmenich, Inc., has been assigned to the technical sales staff of the home office in New York City. C. Richard Myers has been assigned to the technical sales staff of the firm's Chicago office.

Appointed by Fleuroma

Dr. Jerome G. Kaufman has been appointed to the expanding Chemical Research and Development Division of Fleuroma, Inc. He is a veteran of more than 20 years in the organic chemical industry.

The firm's staff of perfumers, under Walter Lengsfelder's direction, has also been expanded. Jean-Paul Baude, who has spent 25 years in the perfume industry in France and the United States, and George Neil, also with over 25 years' experience, have joined Charles Berger and Henry Weiner as perfumers.

Lehn & Fink Div. Sales Mgr.

Robert W. Naething has been promoted to sales manager of the Lehn & Fink division of Lehn & Fink Products Corporation, Emanuel Goren, manager of the division, has announced. Mr. Naething was formerly field sales manager of the division.

Glidden Medical Consultant

James R. Wilson, M.D., has been appointed medical consultant to The Glidden Company, according to Richard O. Westley, vice-president and general manager of the firm's Chemurgy Division in Chicago.

Dr. Wilson will be primarily concerned with research and other activities in connection with RG Lecithin, a soybean-derived dietary food supplement produced by the division.

In 1929 Dr. Wilson became Associate Professor of Pediatries at Syracuse University's Medical School, where he remained until 1946. During this period be engaged in the practice of pediatrics in Syracuse and acted as a consultant to the Beech Nut Packing Company.

From 1946 to 1955 Dr. Wilson was connected with the American Medical Association as Secretary of the Council on Foods and Nutrition. He vacated this position to become a professional consultant to various segments of the food industry, and listed among his current clients are several of the nation's largest food concerns.

In New Shulton Posts

Kenneth Hanover has been named manager of process engineering for the Fine Chemicals Division of Shulton, Inc., and George Foy has been named manager, commercial development, for the division, according to an announcement by W. H. O'Brien, vice-president.

Mr. Hanover will be responsible for the chemical laboratory, the pilot laboratory, and development engineering for all processes. Mr. Foy will be responsible for advertising, sales promotion, market research, and preparation of new markets for development.

C. RICHARD MYERS

ROBERT E. HORROBIN

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First **in New Improved Clinically Tested Nail Enamels**
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H. P. SARKISON

Sarkison in New Merck Post

H. P. Sarkison has been appointed marketing director of the medicinal products department under a new organizational plan at Merck & Co., Inc. He was previously general sales manager. The medicinal products department will plan and carry out the marketing of products to the pharmaceutical, medicinal and cosmetic fields. J. T. Riley is sales manager of the department and H. W. Estey, medicinal products manager.

Organon Promotes Three

Joseph J. Ruvane, formerly assistant to the executive vice-president of Organon Inc., has been appointed director of marketing for the firm. Richard A. Ulrey, formerly assistant to the general sales manager, has been named assistant sales manager. George C. Andreassi, formerly manager of Organon's North Atlantic region, has been appointed field sales manager.

Breon Control Chemist

Charles H. Soren has been appointed control chemist for George A. Breon & Company, Frederick O. S. Spencer, president, has announced.

ROBERT E. FELTON

Merck Chemical Division Reorganizes Sales, Marketing

Reorganization of sales and marketing of the Chemical Division into four separately functioning departments has been completed by Merck & Co., Inc. The move was made to facilitate internal efficiency as well as to improve services for customers.

Each department will operate in specialized areas under the supervision of a marketing director: H. P. Sarkison (medicinal products); J. E. McCabe (agricultural products); R. W. Hayes (general products); and G. C. Moore (distributive products).

T. J. Treacy, director of sales and marketing, to whom the four departmental directors will report, declared that applying the principles of specialization and decentralization by type of business will effect a major influence on customer relations and service. Among other advantages expected from combining marketing and sales functions within each department are more clearly defined lines of authority and greater freedom to make and execute plans.

Robinson-Wagner to Move General, Executive Offices

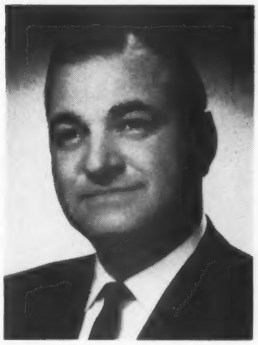
The Robinson Wagner Company has awarded contracts for the construction of air-conditioned general and executive offices at Mamaroneck, N. Y. The offices are expected to be ready for occupancy during the early part of next month.

Named by Pitman-Moore

Ralph E. Brown has been named drug trade relations manager, S. E. Ruch, vice-president in charge of sales for Pitman-Moore Company, has announced.

Robt. Felton Heads Promotion

Robert E. Felton, vice-president of the Felton Chemical Company, has assumed direction of all company promotional activities. Associated with the firm for 32 years, Mr. Felton has had diversified experience in all phases of company operations. For the past six years, he has been working with research and production specialists. In addition to this, he will now coordinate the work of Felton representatives throughout the country.



CHARLES R. RUSTON

Revlon Vice-Pres. of Sales

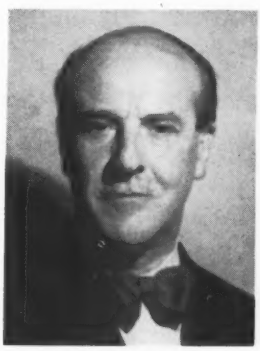
Charles R. Ruston has been appointed vice-president of sales of Revlon, Inc. Joining Revlon in 1954 as West Coast regional manager, he subsequently became field sales manager of the Cosmetics Sales Division and later was promoted to vice-president and general manager of Revlon International Corp.

Toni Buys Chem. Plant Site

The Toni Company has purchased a 62-acre land site near North Chicago, Illinois, on which it will build a new chemical process development laboratory, Stuart K. Hensley, Toni president, has announced. The land is located on the east side of Highway 41, about half way between routes 137 and 120.

De Laires End U.S. Visit

Francois de Laire, head of Fabriques de Laire, and his son, Antoine de Laire, returned to France this month, having arrived in the United States Jan. 25. They brought with them several of the latest creations of the perfumery laboratories of Fabriques de Laire. Before returning to France, Antoine de Laire visited Mexico.



FRANCOIS DE LAIRE

Memo to: **bulk users of**

AMMONIUM SULFATE
Purified, Granular

3 excellent reasons to buy Baker

1. **exceptionally pure**
2. **controlled particle size**
3. **fast-dissolving**

SPECIFICATIONS

Assay $[(NH_4)_2SO_4]$	99.5	% Min.
Insoluble Matter	0.010	% Max.
Residue after Ignition	0.010	% Max.
Arsenic (As)	0.00003	% Max.
Heavy Metals (as Pb)	0.001	% Max.
Iron (Fe)	0.001	% Max.
Neutrality	Passes Test*	
pH of 5% Solution at 25°C	5.0-6.0	

Particle Size (Mesh)
- At least 98% thru U.S. No. 20 Sieve
- At least 90% thru U.S. No. 35 Sieve
- At least 75% on U.S. No. 200 Sieve

*A.C.S. neutrality test for reagent ammonium sulfate.

If Ammonium Sulfate is essential to your process, these three reasons can mean time and money to you.

Baker Ammonium Sulfate, Purified, Granular, is a product of synthesis.

It is produced from pure ammonia and sulfuric acid. This, plus Baker's precise process controls, yields an ammonium sulfate free of the usual impurities of by-product material. Its uniform granular particle size is fine enough to dissolve fast and provide trouble-free processing.

These valuable properties help minimize your processing and product variation, help decrease your production time, help *cut* your costs by the elimination of costly purification steps.

USES: Baker Ammonium Sulfate, Purified, Granular, finds particular application in industries requiring a material exceptionally low in critical impurities such as arsenic, heavy metals and iron.

Pharmaceutical —antibiotic manufacture; preparation of biological serums; precipitant in purifying and separating proteins; in blood fractionation.

Food Processing—in dry yeast production and in leavening agents.

Fermentation—as an activating agent, nutrient, and for pH control.

Cosmetics—in formulations for home permanent hair waving, in shampoos.

PACKAGING: Baker Ammonium Sulfate, Purified, Granular is packaged in a polyethylene-lined corrugated carton in a net weight of 25 pounds, and in bags in a net weight of 100 pounds.

The ability to produce fine and industrial chemicals *of outstanding purity for process and ingredient use* has made Baker a leading supplier for half a century.

Remember... it pays to buy Baker!

J. T. Baker Chemical Co.
Executive Offices & Plant, Phillipsburg, N.J.

Baker CHEMICAL

Baker Chemicals
REAGENT • FINE • INDUSTRIAL

Solon in Freedom Shrine Post

Faustin J. Solon, vice-president of Owens-Illinois Glass Co., has been elected vice-president of the National Freedom Shrine Foundation and will move to Washington, D. C., to assume his new position.

Mr. Solon, long active in civic affairs and fund raising for charities and other activities, will continue his 47-year career with Owens-Illinois, although on a curtailed basis. In the new post, he will be responsible for raising funds for a Freedom Shrine to be built near the Washington Monument.

Joining Owens Bottle Machine Co., as Owens-Illinois was then known, in 1910, Mr. Solon held a variety of positions before entering the firm's sales organization after World War I. In 1929 he was named sales manager for pharmaceutical, proprietary and prescription ware sales, and in 1931 was promoted to general sales manager for the Glass Container Division, a post he held until 1941. Mr. Solon was elected a vice president of the company in 1934.

Stokes Opens Stamford Office

The vacuum Equipment Division of F. J. Stokes Corporation, Philadelphia, has opened a new sales office at 77 Bedford Street, Stamford, Conn. Telephone: Davis 3-2335. John C. Coleman is manager of the new office, which will serve the whole of New England, as well as the Bronx and all of Long Island. The Stokes office in Mount Vernon, New York, from which Mr. Coleman formerly served this territory, has been closed.

Join Roche Mktg. Res. Dept.

J. Frank Cadden and Charles R. Morris have joined Roche Laboratories marketing research department, it has been announced by G. G. Hunt, director of marketing research. Mr. Cadden has been named senior analyst, Mr. Morris, market analyst.

Zimmer Joins Kohnstamm

Howard Zimmer, a registered pharmacist with broad experience in the drug industry, has been named a sales representative in the Washington and Oregon territories for H. Kohnstamm & Co., Inc., it has been announced by Arthur D. Vogel, sales manager.

Bordner F. Ascher

Bordner F. Ascher, president of the American Pharmaceutical Manufacturers' Association from 1940 to 1942, died in Kansas City, Mo. on February 23. He was president of B. F. Ascher & Co. in Kansas City.

Warren M. Berrell

Warren M. Berrell, 45, chief engineer for J. T. Baker Chemical Company, died Feb. 12 in Easton, Pa.

Frederick Dehls

Frederick Dehls, 58, executive vice-president of Benzol Products Company, died Feb. 8 after a prolonged illness. Mr. Dehls was also executive vice-president of Dehls & Stein, manufacturer of brewing supplies.

He was second vice-president of the Synthetic Organic Chemical Manufacturers Association.

Russell H. Dunham

Russell H. Dunham, first president and chairman of the board of Hercules Powder Company, died Feb. 1 suddenly at his home in Wilmington, Del., following a cerebral hemorrhage. He had been in failing health during the previous week.

Mr. Dunham took office as the first president of Hercules late in 1912, when the newly organized company began functioning. He retired as president of Hercules in 1939, remaining as chairman of the board of directors until June 1944. He continued as chairman of the company's finance committee until 1952, and remained as a director of the company until March 1956.

A native of Somerset County, Pennsylvania, Mr. Dunham first worked at the Loraine Steel Company plant in Johnstown, Penna. He was assistant comptroller in 1900 when he left there to join Bethlehem Steel Company as comptroller.

When the Du Pont Company was reorganized in 1902, Mr. Dunham left Bethlehem Steel and came to Wilmington to join the Du Pont Company as comptroller. He served in that capacity until the organization of Hercules Powder Company in 1912.

He is survived by his wife, the former Mabel Wilson of Somerset County; four daughters, Mrs. Marion Dunham Higgins, Chestnut Hills, Penna.; Mrs. Clement W. Miller, Mrs. Robert Douglas Moore, and Mrs. Frances D. Ketcham, all of Wilmington; seven grandchildren and eighteen great grandchildren.

Maxson A. Eddy

Maxson A. Eddy, 54, director of packaging for E. R. Squibb & Sons, died Feb. 13 of a heart attack.

Mr. Eddy joined Owens-Illinois Glass Company in 1932 as Eastern director for research and development. He was plant manager of Owens' Terre Haute manufacturing facility when he left the firm in 1938 to become manager of operations of the Kimball Glass Company. Owens-Illinois Glass Co. purchased the Kimball firm in 1947 and Mr. Eddy was named general manufacturing manager for the Kimball Glass Division.

In January, 1949, he accepted a position as general manager of the Wheaton Glass Co. He left Wheaton to form his own concern, the Eddy Glass Co., in Ocean City, N. J. and Mr. Eddy headed this enterprise through January, 1955 when he joined Squibb.

Surviving Mr. Eddy are his widow, Mary; a daughter, Mrs. Jean Eddy Comins; three brothers, Edward McC. Eddy of Simsbury, Conn., Willard C. Eddy of Dover, Mass., and John A. Eddy of Pitman, New Jersey; and a sister, Mrs. Robert S. Chidsey of Simsbury, Conn.

Lee A. Keane

Lee A. Keane, 63, retired vice-president of U. S. Industrial Chemicals Co., Division of National Distillers and Chemical Corporation, died Feb. 7 at his home in New Canaan, Conn.

Until his retirement in November, 1956, Mr. Keane had been U. S. I. vice-president in charge of sales for a period of 20 years. Previous to that he had been associated with Procter & Gamble, Atlas Powder Co., O'Bannon Corp., Faultless Rubber Co., and Goodyear Tire & Rubber Co.

Surviving are his wife, Mrs. Florette Webb Keane; a son, Edward W. Keane; four sisters, Miss Rose Keane, Mrs. Reginald Reeve, Mrs. Herman Wood and Mrs. John Frawley, and a brother, Geoffrey Keane.

(*Continued from page 301*)

veloped methyl prednisolone (Medrol), a corticoid requiring low dosage and producing few side-effects, and Halotestin (fluoxymesterone) which produces good androgenic-anabolic activity. Parke Davis have offered prednisone and prednisolone under the names of Paracort and Paracortol.

Burroughs-Wellcome are continuing their investigations in leukemia; they have made available Leukeran (chlorambucil). Abbott and Parke Davis are exploiting their knowledge of anticonvulsants; the result is Peganone (ethotoin-Abbott) and Celontin (methsuximide-Parke Davis). The ideal muscle relaxant has still not been found. The 1957 additions to this group are Disipal (orphenadrine-Riker) and Robaxin (methocarbamal-Robins).

In the antibiotic area, previously supplied tetracycline salts have now largely been replaced by tetracycline phosphate complex, an original development of Bristol Laboratories. New diagnostic agents provide the physician with more exact and simplified tools for diagnosis. For the still prevalent anemias Lakeside offers a new injectable hematinic containing an iron dextran complex, known as Imferon, and Lederle developed a new intrinsic factor (Autrinic) which is said to produce higher serum B-12 levels than intrinsic factor concentrates previously available.

The battle of saturated v. unsaturated fatty acids has just begun. The industry provided ammunition with about fifteen products containing linoleic acid in various combinations. But the dairy men and packers still derive a somewhat greater income than the pharmaceutical industry from furnishing supplies for this war!

Two new important indications have been developed for old products. Marsilid (iproniazide-Roche), originally used in TB, has proved to be a potent "pepper upper", and the antimalarial Aralen (chloroquine-Winthrop) is now successfully employed also as an antiarthritic. It pays to continue research with "old" products.

This review has not touched upon the development of the Asian influenza virus vaccine which was successfully produced by five manufacturers. Biologicals are not included in the statistical data appended which now cover a ten year period. Definite progress has been made in 1957 in some fields, refinements in others. Previously heralded newcomers, such as the bioflavonoids in the treatment of colds, are quietly passing out of the picture.

The evidence shows that the pharmaceutical industry is continuing to strive to improve existing products and to produce new ones through research in its own laboratories and in cooperation with the medical profession. In all phases of its operation it maintains a tremendous amount of activity, and this is without doubt the best way to counteract any kind of recession.

PHARMACEUTICAL PRODUCTS INTRODUCED
1948 - 1957
A Ten Year Period

	Number of Firms	Total New Products	New Single Chemicals	Duplicate Single Products	Compounded Products	New Dosage Forms
1948	80	399	36	142	221	102
1949	84	389	40	147	202	170
1950	100	326	28	100	198	118
1951	86	321	35	74	212	120
1952	89	314	35	77	202	170
1953	107	353	48	79	226	97
1954	101	380	38	87	255	108
1955	124	403	31	90	282	96
1956	126	401	42	79	280	66
1957	127	400	51	88	261	96
		3686	384	963	2339	1143
New Dosage Forms		1143				
		4829				

New Single Chemicals—indicates products which are new single chemical entities not previously known, and developed by one manufacturer.
Duplicate Single Products—products such as reserpine, dioctyl sodium sulfo-succinate which are put out by various manufacturers.
Compounded Products—any product having more than one active ingredient.
New Dosage Form—if a product has originally been marketed in tablets and is now offered in ampuls, suppositories, etc., the latter are considered new dosage forms.

DRUG AND COSMETIC LAW

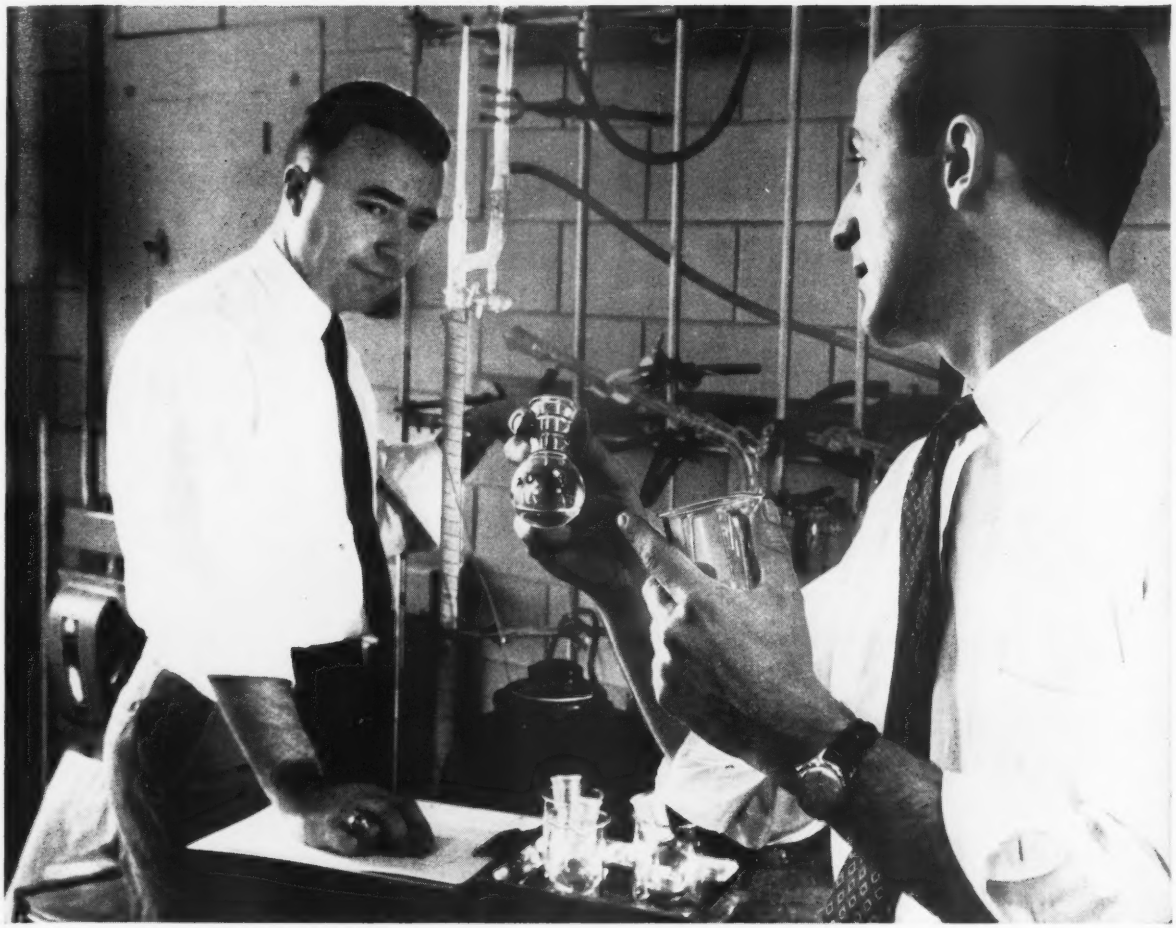
(*Continued from page 303*)

volved, may completely exempt any colors it may care to from certification provisions."

Mr. Goodrich said that the FDA "had always taken the view that Congress meant what it said when it told us to list and certify for use in foods, drugs, and cosmetics only those coal-tar colors that are harmless. We accepted the statement in the legislative history that a harmless color is one without adverse physiological effect. When our Division of Pharmacology completed investigations which established that three colors had significant toxicity when fed to laboratory animals, we announced the scientific results and held a hearing to remove the three colors from the approved list. Although scientific evidence at the hearing was undisputed, our construction of the statute was seriously questioned in three Courts of Appeals. In 1956, the regulations removing the colors from the list were upheld in New York. A proceeding for review in Chicago was thereupon dismissed. But the Florida Citrus Exchange and other users of one of the colors, Red 32, sought and obtained judicial review in the Fifth Circuit. In July 1957, the regulations were set aside by the Court of Appeals in so far as they removed Red 32 from the list of colors available for use in coloring Florida and Texas oranges."

Believing that these two decisions were in conflict, the FDA has asked the U. S. Supreme Court to review the question as to "whether the Department must place on the list of harmless colors, a toxic coal-tar color that can perhaps be used in small enough amounts so that the colored food will be safe. The Court of Appeals in New Orleans held that existing law gives us that responsibility; that when a color is

(*Continued on page 366*)



"Look at this sample of the stripped coconut . . . caprylic under zero point five!"

Depend on it – the caprylic acid content of GROCO 26 Stripped Coconut Fatty Acid never exceeds 0.5%. The capric acid content is reduced to less than 6%. The caproic is removed completely. Composition –

Caprylic acid	0.5%	Palmitic acid	6.0%
Capric acid	5.5%	Stearic acid	2.0%
Lauric acid	50.0%	Oleic acid	11.0%
Myristic acid	23.0%	Linoleic acid	2.0%

Also important – the amount of each component in GROCO 26 Stripped Coconut Fatty Acid never varies by more than ±5% of the specified amount. Lauric content is higher than you find in competitively priced acids. Color is lightest. Odor blandest. Heat stability and shelf life are outstanding.

Two facts explain these advantages. We use only coconut oil as raw material. We split and distill continuously by a standard procedure – always the same, shipment after shipment.

"Always specify A. Gross" . . . GROCO 26 . . . There's no better way to begin an end product.

Have you a detergent, cosmetic, resin or other problem that GROCO 26 might solve? Send for test samples. . . . Would you like more information? Ask for our brochure, "Fatty Acids in Modern Industry."

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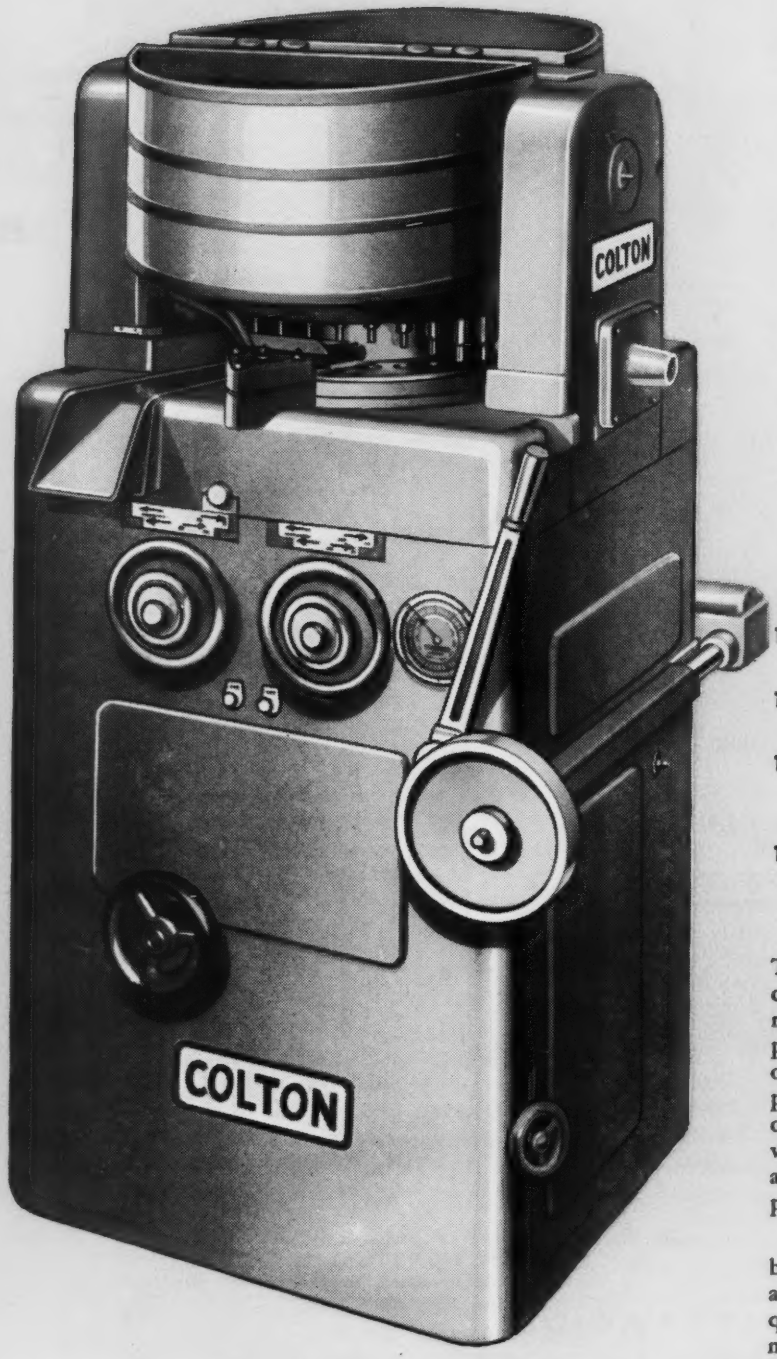
Revolutionary New COLTON Ultra-High-Speed Tablet Press with 49 Stations; No Die Locks



1. New low-level one-piece stainless steel twin hoppers allow normal, eye-level inspection by operator. Industry's biggest standard hoppers.
2. New design; each hopper instantly removable exposing upper pressure rolls, punch heads, cam tracks for servicing.
3. New clamp ring eliminates die locks; new design die cannot rise above table surface; easily removed from below.
4. New revolutionary construction steel die table gives better alignment of punches in dies, allows 49 stations in compact table with highest rigidity and strength.
5. New adjustable, removable discharge chute of high polish stainless steel.
6. New control settings grouped on machine front, all in easy reach of operator.
7. New tachometer-counter shows tablets per minute and production count in hundreds.
8. New hand wheel location plus convenient removal slide makes lower punch removal easy.
9. New flush-mounted start-stop switches.
10. New frame; heavy steel weldment, box-type with opening covers.
11. New efficiency; 20% production increase without sacrificing feed time or dwell time.
12. Up to 3500 tablets per min.; up to 7/16″ dia.; 3/4″ depth fill; 9000 lbs. max. pressure; 2 H.P. motor.
13. New streamlined design; easy to clean; round edges, flat, smooth surfaces, no corners, pockets, grooves, crevices.

This Colton No. 249 streamlined low-boy upsets some current ideas about high production machines. It takes no more floor space than standard machines, no more power, much less attention and it is easier to set up, operate, clean, change over and service than any high production machine you've ever known. And, because of basic design advances, it is absolutely rigid, virtually vibrationless and maintains tool alignment and tablet accuracy in continuous, long running, high speed production.

With its revolutionary new features it combines the best features of preceding models. It is a unique achievement and a fitting climax to Colton's three quarters of a century of leadership in this field. Smaller models are available with 33 and 41 stations. Write for a detailed specification sheet on Colton No. 249 Tablet Press.

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Management Forum

By FRANCIS CHILSON
INDUSTRIAL CONSULTANT

Education

The hysteria caused by Sputnik will grossly—has grossly—exagerated the importance of specialized scientific education. Congress will appropriate millions to foster scientific education, as if all you have to do to create a scientist is to spend money on him. Far be it from me to decry the value of scientific education. But there are other values in life equally important. Let us not forget that the men who visualized underseas travel, air travel, space travel—the men who foresaw sputniks a hundred years ago were not scientists. They were all non-technical, imaginative writers who couldn't have told the difference between an atom and a baseball.

It was a poet who foresaw military air craft in 1847. You will recall Tennyson's Locksley Hall:

> "From above there came a shouting
> And there rained a gastly dew
> From the nations airy navies
> Grappling in the central blue."

It was Tennyson, incidentally, who foresaw the United Nations in that weighty phrase in the same poem, "parliament of man".

Jules Verne was not a scientist but his moon ship was a three stage rocket very much like the multi-million dollar firecrackers that our soldiers are playing with down at Cape Carnival *(mis-spelling deliberate)*.

The difference between the scientist and the poet is that the scientist's imagination is disciplined and the poet's is not. Education means the same thing in whatever field it is pursued. Just as the scientist can become narrow and dogmatic by delving too deeply into one field of research, so can the scholar become equally narrow and dogmatic by spending his life burrowing into one subject.

The scientist should be something of a humanist and the humanist something of a scientist. In spite of all that has been written about the narrowness of the scientific mind, it is a fact that most of the really great scientists are men of broad education. The Huxleys for example. I have had the good fortune to work with many outstanding scientists and the majority were well read men with an insatiable curiosity about everything. But it is a fact however that these men did not acquire their learning by virtue of the requirements of the universities that trained them; they acquired it themselves.

I think it would be a good thing to furnish every research library with several hundred good books—great books—and require all scientists to read them. An occasional seminar on poetry, philosophy or history would afford a stimulating relief from the customary exacting scientific grind and undoubtedly would spark some new ideas. The mind needs catalysts too.

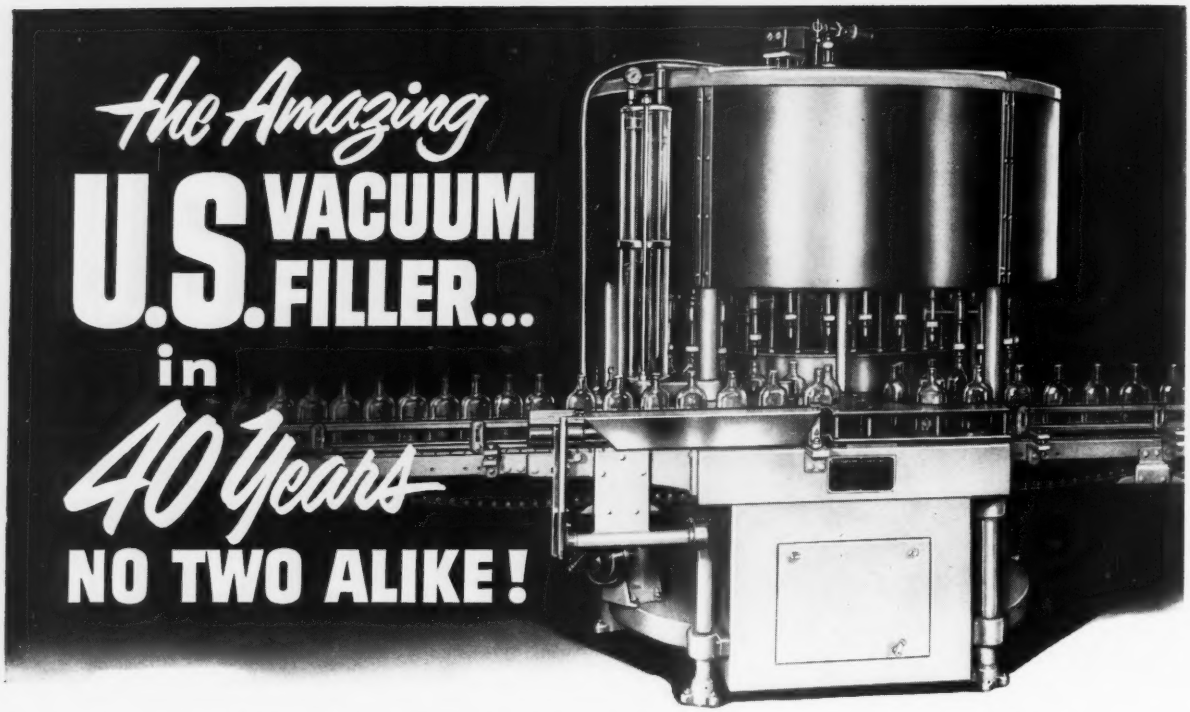
In this connection you will be interested in the following quote about the Murray Committee Report on University Education, which was set up by the Australian government to study the problem of uniting education in science and the humanities.

"The love of efficiency, and of power, has come easily to the scientist who is untrained in the social sciences and who knows little of how men behave. Intelligent men often fail to apply the same critical analysis to society as they do to chemistry or medicine, and so are often easily influenced by totalitarian ideas.

Because of this danger, the Murray committee has pointed to the need to establish in Victoria a new and full university and not merely an institution for training more scientific specialists. It is essential, of course, to stimulate an interest in science in the schools and the universities. In this way it is possible to keep abreast of world discoveries in science. But it is just as necessary to stimulate the study of the humanities.

The Australian Prime Minister, Mr. Menzies, in discussing the Murray report, said:

The Amazing U.S. VACUUM FILLER... in *40 Years* NO TWO ALIKE!



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The growing popularity of this Filler seems less *amazing* and more *deserved* when the engineering back of each installation is understood. Does your filling operation meet today's competition at a profit? Put your problem up to U.S. Our recommendations will not obligate you. For complete information write for the Rotary Filler Bulletin.

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Continuous production. Two containers fill while two are loaded. Automatic product supply. Vacuum adjustable, flow-regulated. Handles containers to 4⅛" dia. Send for "Bulletin B-2."

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"Civilization in the true sense requires a close and growing attention, not only to science in all its branches, but also to those studies of the mind and spirit of man, of history and literature and mental and moral philosophy, of human relations in society and industry, of international understanding. Let us have more scientists and more humanists. Let the scientists be touched and informed by the humanities. Let the humanists be touched and informed by science so that they may not be lost in abstractions derived from out-dated knowledge."

Merge And Diversify!

A baffled president viewed the sky,
Then shouted forth this clarion cry—
"Huge profits are such easy pie;
Our only need—diversify!"

Where once they knitted only socks,
They soon made crocks and frocks and clocks;
Another group made only soaps,
But now it's nails and hooks and ropes.

Instead of grinding grain to flour,
The mill makes motors with horse power;
They all have broadened selling scopes—
No standing still, like silly dopes.

But company dreams have faded far,
And now they see another star;
Alas, for them, it shines too late—
Its well-known name is Concentrate!

—Paul Hinkhouse.
Courtesy Wall Street Journal

Brainwasher

John Locke of Visalia, California has invented a whispering pillow that contains a tape recorder which whispers softly as you fall off to sleep, "You will have faith in yourself, faith in others. You are filled with love. . . . It was invented for the benefit of the convicts of Tulare Country California, but I can visualize other great possibilities for it in many fields of human endeavor.

As a matter of fact there's nothing really new in the idea. It was used during the war by the RAF to teach fliers what to do instinctively when they later became involved in situations of great danger. The RAF used an ordinary phonograph which was turned on very low after the student fliers had gone to sleep. You might for instance try this on your mother-in-law and convince her to go to Timbucktoo.

Flexible Conveyer-Stacker

Two men can load or unload a boxcar at the rate of twenty to twenty-five bags or cartons a minute with the conveyer-stacker made by Jervis B. Webb Co., Detroit. It consists of a stacker, a belt-drive car, as many 18-inch-long center cars as desired, and a power car (not shown) that moves the entire system from one location to another. The conveyer can be bent horizontally in any direction; the stacker will swing 180 degrees, and has a 6-foot boom that can be raised from 18 to 72 inches. Without feeder apparatus, a system with a 12-inch belt and ten center cars costs $8,282; with an 18-inch belt, $8,840.

Plastic Spray

The Rand Development Corporation of Cleveland, Ohio, have introduced a process whereby glass wool fibres and a plastic carrying agent can be sprayed on tanks, boats, truck bodies, swimming pools and other objects requiring a corrosion and rot-proof covering. When the sprayed product has dried on any surface it is in effect like molded fibre glass.

The application of this new product requires a special gun which feeds and chops fibreglass from a continuous rope and mixes the chopped fibres with two streams of plastic resins and catalysts. The sprayed product is deposited as a fluffy mass which quickly dries and forms a hard, impervious laminate. Since the material is corrosion proof I'd like to suggest the possibility of using it to coat plain steel tanks so that they can be used for products that ordinarily would require glass lined or stainless steel construction. You might even try spraying a cocoon around your mother-in-law.

This material was brought to my attention by Commodore Charles Bowman, well known drug entrepreneur, otherwise known as Christoforo Colombo Bowman. Charlie is a master navigator and owner of a yacht about the size of the Queen Mary. Charley boasts that he can navigate the Inland Waterway from New York to Florida blind folded. He knows every rock in the channel all the way down, having hit most of them at one time or other. As the result of inaccurate maps, faulty bell buoys, missplaced lights, false weather reports, Charley's bottom—I mean the boat's bottom—developed quite a few dents and splinters. So he had the boat hauled out this spring and a new bottom sprayed on, using the process described above. Charley says that the next time he hits a rock he'll plow right through it.

Unique New Machine Construction Kit

A unique new machine construction kit designed to enable engineers, machine designers, scientists, inventors and automation specialists to make precision working models of practically any type of machine, drive or mechanism is now available from FAC Division, 9551 Grand River Ave., Detroit 4, Michigan.

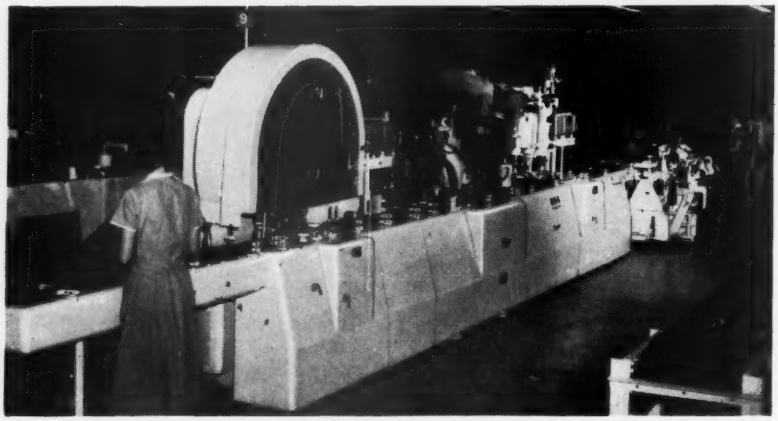
The FAC construction system uses a basic construction concept of round rods and beams that are assembled into frameworks by rugged clamping means. A wide variety of precision-machined mechanical components such as ball bearings; spur, bevel, internal and worm gears; gear racks; ratchets; sprockets; pulleys; sheaves; couplings; springs;

THE LEADERS LOOK TO PNEUMATIC

- New plants Pneumatic equipped
- Avon Products Inc., example
- More speed, flexibility provided

Where "modernization" is the order of the day, packaging is coming in for particular attention. More often than not equipment now in operation has been made obsolete by new design Pneumatic machines — developed for the faster, more efficient handling of dry, free flowing materials, as well as liquids and semi-liquids.

Pneumatic engineers have been exceptionally busy in the last few years, shattering previous standards of productivity through radically different approaches to the mechanics of packaging. Waste eliminating accuracies, and cost cutting speeds never before achieved, now feature the performance of the latest Pneumatic machines.



High-Speed conveyor-synchronized bottling line in operation at Avon's ultra-modern plant in Morton Grove, Illinois.

Leaders in their field — such as Avon Products Inc., makers and merchandisers of a line of nationally known cosmetics — are acutely aware of the absolute necessity to keep up-to-date in the all-important packaging phase of their production. In their sparkling new plant at Morton Grove, Illinois, their famous Avon Skin Freshener and Avon After Shaving Lotion, get the full treatment — from container cleaning right through filling, capping and labeling — on the very latest, fully synchronized high-speed Pneumatic lines. Without the slightest hesitation, on spaced centers to prevent jar or jostle from contact, the containers flow through the different stages as smoothly as oil through a pipe, with never a hand laid on them, from beginning to end.

Outstanding features of this equipment are the extreme gentleness with which it handles delicate, easily marred caps, and its easy adaptability to changes in container shapes and sizes. Within unusually broad limits, shifts from one to another may be made in short order — with minimum down time. Bottling will never be a bottle neck in this plant.

Keeping containers moving through the line with such automatic regularity and precision as to result in "lower cost per container" handling is a habit with Pneumatic machines. That, no doubt, is the reason why the country's leading producers have the habit of using them so extensively. Doubtless, also, it is the reason why so many other concerns "follow the leaders" to Pneumatic.

★ ★ ★ ★ ★

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PNEUMATIC

BOOTH 505 at P M and M E of 1958, Atlantic City—March 25-28

wheels; disks and universal joints are utilized in the unusual system.

It is possible to construct smooth-operating, precision-detailed mechanisms such as reciprocating motions, slide motions, geared transmissions, differentials and coil-spring devices with standard kit components.

In addition to permitting the development of new ideas and creation of machines and mechanisms in design work, models made with the kit can be used to prove and sell mechanical concepts and serve as sales tools.

FAC Models have such ruggedness, precision and long wear life properties that they can be used as machines and test equipment for doing research and development work.

The FAC construction system was created by a Swedish inventor named Mark Sylwan. He saw a great need by industry for an accurate method of constructing and proving machines and mechanisms that would avoid large development program expenditures on machines whose principles had not been thoroughly substantiated. The FAC (From the Latin for 'make' or 'do') system is the result of this endeavour.

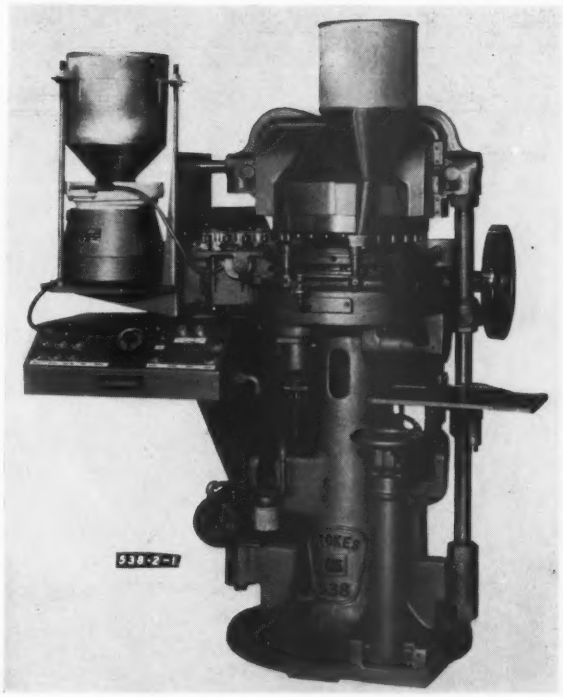
Many kits have been sold in Sweden and England. The great industrial response to these first kits along with their proven utility led Mr. Sylwan and his associates to make the FAC System available to engineers and designers in American industry where automation and automatic machinery are the byword.

Many Swedish firms have already made extensive use of the FAC system; some building models of huge log saws, travelling cranes, articulated rail cars and rotary printing presses to prove designs before blueprints were finalized and construction started. One research laboratory made from standard FAC kit parts a tester for ball-point pens.

The kits are made in two sizes each supplied with complete instruction manuals. The FAC-X1 kit, which sells for $250.00 has 2,700 parts and is intended for student engineers as well as professional engineers. The top section of the sturdy, attractive, hardwood case has an assortment of gears and other machine elements. The bottom section has dividers for various components and feasteners which are plastic-packaged. The case measures 23½ by 15 by 2¾ in. and weighs 24.2 pounds.

The larger kit is called the FAC-X2. This kit sells for $400.00 and has 4,700 parts especially selected to meet industrial machine design and development requirements. Its case has three sectioned tiers in addition to the top section. It measures 23½ by 15 by 4⅜ in. and weighs 39.1 pounds.

FAC kit components are precision made in Sweden to exacting tolerance specifications. Extra parts for expanding the basic kits can be catalog ordered for delivery from warehouses in the United States.



Improved version of the Stokes Model 538

Improved Stokes Press-coating Tablet Machine

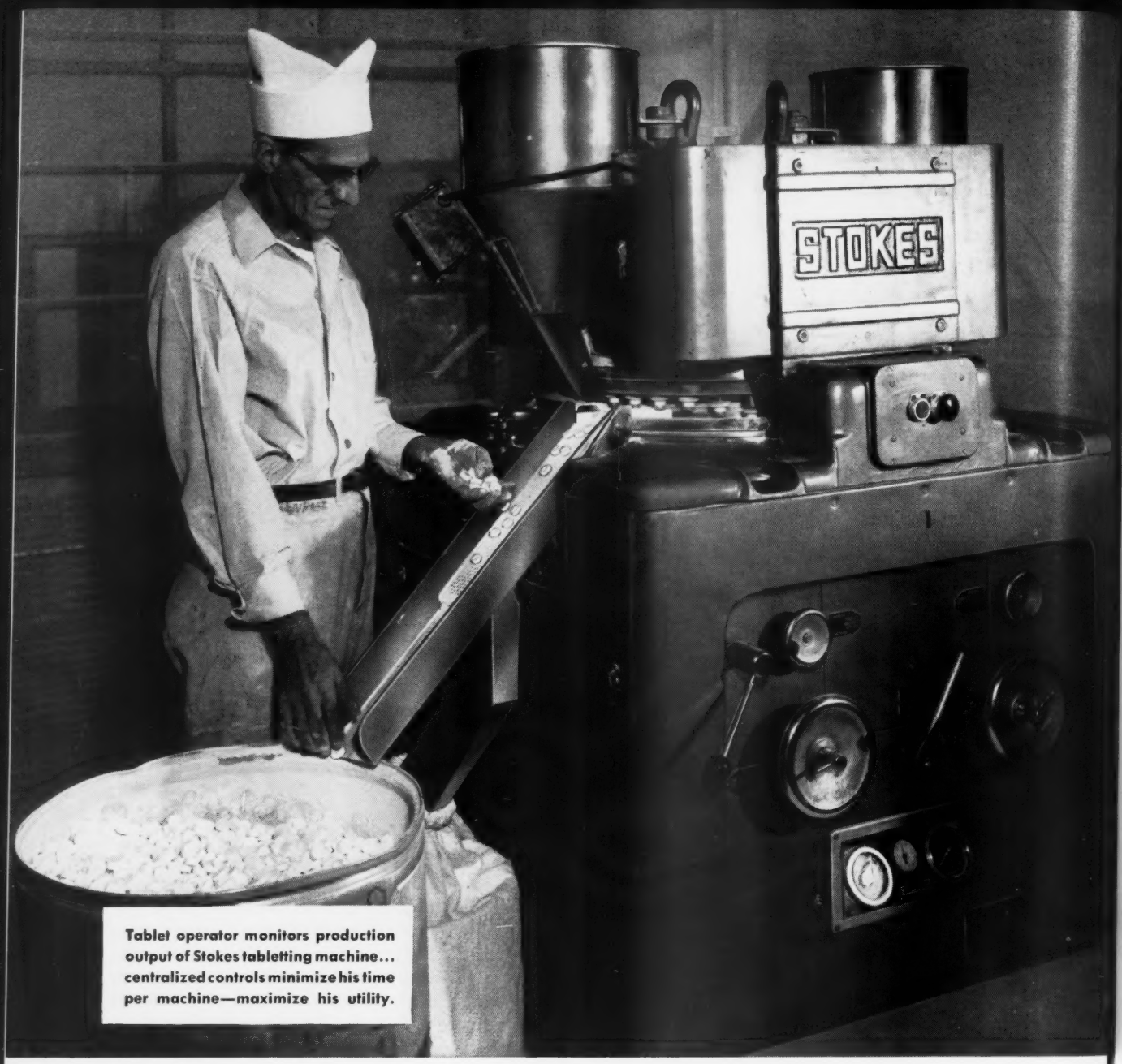
A new, greatly improved version of its press-coating tablet machine—that makes tablets-within-tablets by dry-coating a core tablet—has been introduced by the Pharmaceutical Equipment Division of F. J. Stokes Corporation, Philadelphia.

The redesigned Stokes Model 538 rotary press incorporates a number of features suggested by the experience of a number of America's leading pharmaceutical manufacturers with the original version on actual production. The added features simplify the operation of the press, make set-up and adjustment easier, reduce maintenance, increase its automaticity and labor-saving characteristics without sacrificing reliability and accuracy at any speed, and provide the maximum of versatility and flexibility.

One of the principal new features is a universal feed system, which enables the new Stokes press to handle various shapes of core tablets and the whole range of sizes of finished tablets within its rated capacity with only minor and inexpensive changes. An improved transfer system assures smoother operation and precise, accurately centered core placement in the die at higher speeds.

Another new feature is a redesigned low-voltage d-c electrical inspection system, with a single detection station to spot and reject coreless tablets. Controls can be set to shut the press down automatically if the supply of core tablets runs out.

The machine has been producing at speeds up to 750 tablets per minute, and can make finished tablets up to ⅝ in. in diameter, with a maximum depth of fill of 11/16 in.

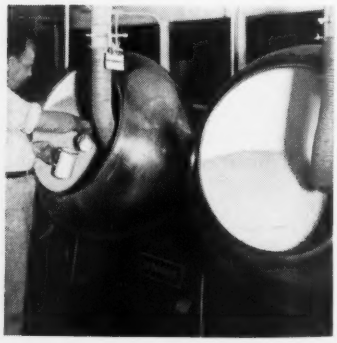


Tablet operator monitors production output of Stokes tabletting machine... centralized controls minimize his time per machine—maximize his utility.

Other Stokes equipment at work for Wyeth...

Two Stokes Model 566 Multi-layer Tabletting Machines press 2 and 3 layer tablets to perfection. Pre-compressed layers permit periodic weight checks . . . create clean, sharp layers.

Many of Wyeth's earlier machines were Stokes BB-2 rotary tabletting machines. Wyeth's excellent pre-ventative maintenance program keeps these and other equipment in top operating condition at all times.



In the finishing section, a battery of Stokes Coating and Polishing machines are in continuous service. Here, cores are coated with a palatable neutralizing agent — colored for tablet potency identification.

In all drugs, accuracy of the dosage is critical. At Wyeth, tablets are carefully checked for size. The precision of Stokes tabletting equipment aids in adherence to close tolerances.

Wyeth produces many products in Stokes-equipped tabletting department

Wyeth Laboratories, a division of American Home Products Corporation, operates a large tabletting department at their Washington Avenue plant in Philadelphia. Nearly every machine connected with the production of tablets of all types bears the name Stokes.

One of the largest single production items in this plant is a tablet produced in 4 physical sizes, at 5 strengths, using a bank of Stokes Model 533's. These tablets are then sealed, color coated, and polished on a large bank of Stokes Pan Coaters and Polishers located in an adjoining area.

The primary requirement in this operation is exact control of tablet size and weight. The precise engineering in both design and construction of the Stokes 533 assures dependable control of both. N. R. Brenner, Plant Superintendent, and F. D. Koup, Tabletting Department Manager both agree that the Stokes Model 533 high speed press is excellent for tabletting operations—"giving us the quality we want—in the quantity we want."

The Stokes Model 533 occupies little floor space. Operating costs are lower because the press requires so very little attention. Pressurized lubrication is continuous and completely automatic. Centralized controls and easy access enable fast and accurate set-up, adjustment and changeover.

Find out how the new Stokes Rotary Tabletting Machines can save on your own production runs. Write for Bulletin 650—or call your nearest Stokes office.

Pharmaceutical Equipment Division
F. J. STOKES CORPORATION
5500 Tabor Road, Philadelphia 20, Pa.

STOKES

(*Continued from page 356*)

needed for the successful marketing of a food, such as the orange, the color is required in production, and, thus that we have to establish a safe tolerance for it to permit this particular use. This construction involves not only our basic authority in dealing with coal-tar colors, but has added to the regulatory scheme the requirement that we list both 'harmless' coal-tar colors and also poisonous and deleterious ones which are needed and for which a safe tolerance can be established."

"If this decision is the law," continued Mr. Goodrich, "we will have to reorienate our thinking about coal-tar colors. Heretofore we have all considered them as innocuous substances to be used in any amounts by food processors to achieve the desired eye appeal. The sole question we have had to ask ourselves is whether the color is from a certified batch. This certification gave us official assurance that the color was itself without any toxic potential whatever and that no restrictions need be observed in its use. If we go into tolerances under the interpretation of the Fifth Circuit, we will have two lists—one for harmless colors which can be used without restraint, and the other for toxic colors which can be used only in or on selected products and within the stringent limitations of a prescribed tolerance. When the color is a toxic one, its user must first establish that it is required by him in his production. In this he must compete against other manufacturers unless the color is safe enough to be tolerated in a variety of products. In addition, manufacturing controls must be adopted to give him assurance that no more of the toxic color enters his food than the tolerance allows. And our inspectors must then interest themselves in manufacturing formulae, procedures, and controls, and must obtain the necessary samples to enforce the tolerances in the interest of public health.

"While we would prefer to have only harmless colors in our foods, it may well be that some essential coloring materials will not meet such a stringent test. If this is so, as certainly many people believe, new legislative consideration will be required to provide a workable law dealing with the safety of colored foods."

ASPIRIN AND BUFFERED ASPIRIN

(*Continued from page 305*)

the mere act of giving the patient attention affects the response. This has been especially remarked in studies of tranquilizers applied to the treatment of mental disease where the long-neglected, difficult patient may respond even to a placebo because he is finally getting some attention. Unless this subjective response, superimposed upon the subjective pain, can be properly neutralized, studies of milder analgesics remain somewhat questionable.

Batterman and Cronk separately studied blood salicylate levels after the ingestion of buffered and unbuffered aspirin. The first series by Batterman contained 112 subjects, with different subjects used for each drug and for each time interval. This technique does not allow for the wide individual variations in salicylate levels, and over-lapping of ranges in all the time intervals is quite large. In a smaller study, the same subject supplied samples for all the time intervals and analysis was done by three different methods. Only averages were given and these indicated the same blood salicylate levels with buffered and unbuffered aspirin. Cronk also obtained samples at different time intervals from the same subjects and reported no differences between buffered and unbuffered aspirin. Here again only averages were reported and the spread in the data was wide enough for considerable overlapping. Comparable data by Batterman and Cronk are in good agreement. As against these findings is the earlier work of Paul, Dryer and Routh, aided by a grant from Bristol Myers Co. (*J. Am. Pharm. Assoc. Sci. Ed.* 39:21, 1950) which showed in 47 subjects that at 10 minutes the salicylate level was 3.9 mcg./cc. for aspirin and 6.6 for the buffered product and after 20 minutes 5.2 and 12.8 respectively. Since none of the authors reported raw data or graphs for individual subjects, questions about the relative validity of the diametrically opposed results cannot be answered with assurance. In Cronk's charts showing the duration of relief, the buffered product seemed to show shorter duration of activity. If these differences are significant, then there may here be an indication that the buffered aspirin is destroyed and inactivated more rapidly because it has been absorbed into the blood more rapidly.

In short, the double blind technique seems to have enough holes in it to cast doubt on findings, in either direction, concerning the merits of buffered vs. unbuffered aspirin, and the analytical data presented for blood level studies are somewhat equivocal. We must still fall back on the empirical data provided by "universal experience."

The editorial in the same issue of "New England Journal of Medicine" warrants at least passing comment. The following statement appears in the editorial: "The amount of buffering material present in each 'buffered' aspirin tablet is exceedingly small. being less than one tenth the amount found in the usual antacid tablet. It is highly unlikely that this degree of buffering action is sufficient in any way to change the gastric contents, to influence absorption or to prevent any degree of local irritation." As a matter of fact, each tablet contains, along with 300 mg. of aspirin, 100 mg. of magnesium carbonate and 40 mg. of dihydroxyaluminum aminoacetate and I know of no antacid tablet, usual or unusual (for human use) that contains 1.4 grams of antacid. Furthermore, the magnesium carbonate alone has

double the equivalent weight of the acetylsalicylic acid present, assuring residual acid-binding capacity for the tablet.

But in the main, the editorial makes the advertising claims of perfectly acceptable analgesics the base upon which it builds a tirade against proprietary drugs which smacks of the J.A.M.A. under the early editorial days of Morris Fishbein. From the tone of the editorial, it would seem that all self-respecting lay publications, television stations and radio stations should refuse to accept proprietary drug advertising. Saying: "After radio came television, which brought the ancient medicine show to life," the editorial continues:

"Just as the credulous grandfathers of the present generation found the Indian medicine man and old Doc Jones and his cure for rheumatism convincing, so do their grandchildren find 'tired blood,' 'relieves headache twice as fast,' 'like a doctor's prescription,' and other rediculous statements, claims, half-truths and the associated entertainment convincing to an incredible degree. Unfortunately the same factors are operating in the modern version as with the old Doc Jones show, but where the previous generation shelled out two bits to a dollar for a bottle, the grandchildren frequently shell out five dollars and not infrequently come back for more and continue to do so for months."

In a medical journal, all this makes great stuff to feed the physicians who get the magazine. However, why not face the fact that the Food and Drug Administration and the Federal Trade Commission are ever alert to misbranding and false advertising of proprietary drug products, and are quite generally considered to be enforcing their respective laws with marked proficiency. Also why not face the fact that there are practically no limitations on claims made for prescription drugs to the members of the medical profession, in the erroneous belief that all members of the profession are going to be able to evaluate these claims properly in their own practices.

We would think that it is time that medical journals of this sort stopped tilting at windmills and tried to correct some of the abuses that still exist in the medical profession.

THE PERFUMER'S VOCABULARY

(*Continued from page 307*)

poration of certain "low-toned" chemicals, such as benzyl isovalerate, in a composition. This quality may be compared to the illusion of physical depth in music created by the discreet emphasis of the low tones.

The meaning of "low-toned" is further illustrated by a comparison of benzyl acetate with benzyl isovalerate. The former is light, brilliant in odor, "high-toned" as a violin; the latter is heavy, unspectacular in odor, "low-toned" as a viol. From the viewpoint of structural chemistry it is interesting to note that the majority of materials producing this effect of "depth" are, like benzylmisovalerate, the esters of longer chain aliphatic acids.

Diffusive—a word used to describe a fragrance whose odor spreads quickly and widely. It is a fragrance quality greatly appreciated by women, since it is sure to attract attention.

Dry Out—A technique used by perfumers for examining a fragrance. It involves placing a drop of the fragrance under examination on the tip of a freely suspended strip of blotting paper, and then studying the odor as the fragrance evaporates. The time of examination may run from a few hours to several days, depending upon the degree of fixation in the product under examination. The two functions of the "dry out" procedure are to study the performance and fixative powers of a fragrance being created, and to discover the components of a fragrance for matching purposes. As the more volatile components of a fragrance evaporate, the fragrance becomes unbalanced and the various residual components reveal themselves more clearly.

Earthy—The peculiar aroma of freshly turned soil represented in perfumery by a tincture of ambergris. Earthy fragrances have considerable appeal for a great many people. Consequently ambergris is widely applied in a variety of fragrances.

Evanescent—A word descriptive of a fleeting or rapidly vanishing fragrance, occurring as a "top note". Evanescence indicates poor fixation of a fragrance and is not desirable.

Extract—An alcoholic solution of a fragrance oil. The traditional concentration of the fragrance oil in an extract is between 12 and 32 ounces of oil per gallon of finished extract. The layman refers to the "extract" as "perfume".

Fixative—A material incorporated in a fragrance oil for the purpose of (1) retarding the volatilization of the fragrance oil when it is applied to a surface, so that the odor will be more persistent; (2) producing a comparatively uniform volatilization of the fragrance oil so that its fragrance does not radically change as it evaporates. Animal products (civet), natural gums (gum benzoin), high boiling essential oils (vetivert) and high boiling chemicals (benzyl salicylate) illustrate fixatives existing in the various classes of aromatic materials. Most fixatives have, to some degree, an odor of their own, which must be taken into account in the design of a fragrance oil.

Flat—A word descriptive of a fragrance that is lacking in distinction. A fragrance is also said to go "flat" when it is dulled by an excessive addition of certain chemicals, as for example ionone.

Flowery—Possessing a fragrance resembling a

(*Continued on page 382*)

Perfumer's Shelf

Linden

The quality of the linden fragrance is sweet and honey-like. Piesse in 1865 suggested that the addition of one part of "Otto Lignaloe" to eight parts each of rose, jasmin and orris extracts gave a perfume which, when diluted, is a good imitation of the scent of the Lime tree blossoms.

Poucher suggested that "the perfume is imitated by mixtures of hydroxycitronellal, geraniol, linalool, methyl anthranilate, anisic aldehyde, ionone, and benzyl acetate, fixed with musk ketone, benzoin and Balsam Peru". The key to the fragrance is primarily a muguet-lilas liaison upon a sweet mellifluous foundation, heightened by a high, ethereal jonquil-hyacinth top note. The odor pattern, reduced to its simplest terms would comprise a base of about 40 per cent hydroxycitronellal and 20 per cent each of cinnamic alcohol, phenylpropyl alcohol and linalol, which, after appropriate dilution gives an initial impression of the fundamental fragrance of the living blossoms.

Rene Cerbelaud points out the advantage of strengthening the muguet note by the addition of cyclamen aldehyde, especially in tropical Tilleul exotic complexes, while in the simulation of the fragrances of *T. Carpentras*, *T. argente* and the *Andromeda*, the emphasis upon the lilac motif is seen by the inclusion of hydroquinaldeine, *p*-methyl acetophenone, farnesol and ethyl furfurylhydracylate.

A preliminary experiment may be made by the proportional mixing of such radicals as lily, lilac, rose, jonquil and honeysuckle. The outcome should approach a pleasant linden-like fragrance, but will obviously lack "momentum." It is therefore necessary to consider those osmophores which will confer the dynamic ability to emanate fragrance over a considerable distance.

This may be successfully accomplished by a careful manipulation of the several powerfully-odored Schiff's Bases, for in Aurantiol (methyl anthranilate and hydroxycitronellal) diluted with linalol will be found the important initial liliaceous fundamental which may be conjoined with the lilac essentials found in Acaciol (Methyl anthranilate and anisic aldehyde), while the requisite honey-like background may be obtained from a simple Miel complex formulated upon phenylacetic acid, methyl phenylacetate and methyl cinnamate. The floral note of this composition may be heightened by the inclusion of the condensation products of methyl anthranilate with amylcinnamic aldehyde (and or cyclamen aldehyde), both of which manifest decided honeysuckle nuances, and finally a little assistance from Rose centifolia and a jonquil base will position the requisite high floral topnotes.

—E. S. Maurer, *S.P.C.*

Ambreine Solid

Ambreine Solid, D&O, is a fused blend of natural and synthetic fixatives and sweeteners in the form of irregularly shaped lumps which easily melt or dissolve in heated benzyl alcohol, benzyl benzoate, essential oils or aromatic chemicals. The product is being offered by Dodge & Olcott particularly for sweetening and fixing powder perfumes.

Pharmaceutical Flavors

From time to time my friends wave a blotter in the neighborhood of my nose and I obediently respond that it is by far the best and most nearly natural strawberry or cherry or raspberry or even tutti-frutti that has ever come my way. The next question is a little more difficult to answer, because in one form or another it is "Don't you think this would be very effective in a pharmaceutical preparation?" I usually answer that I'm not sure that this necessarily follows.

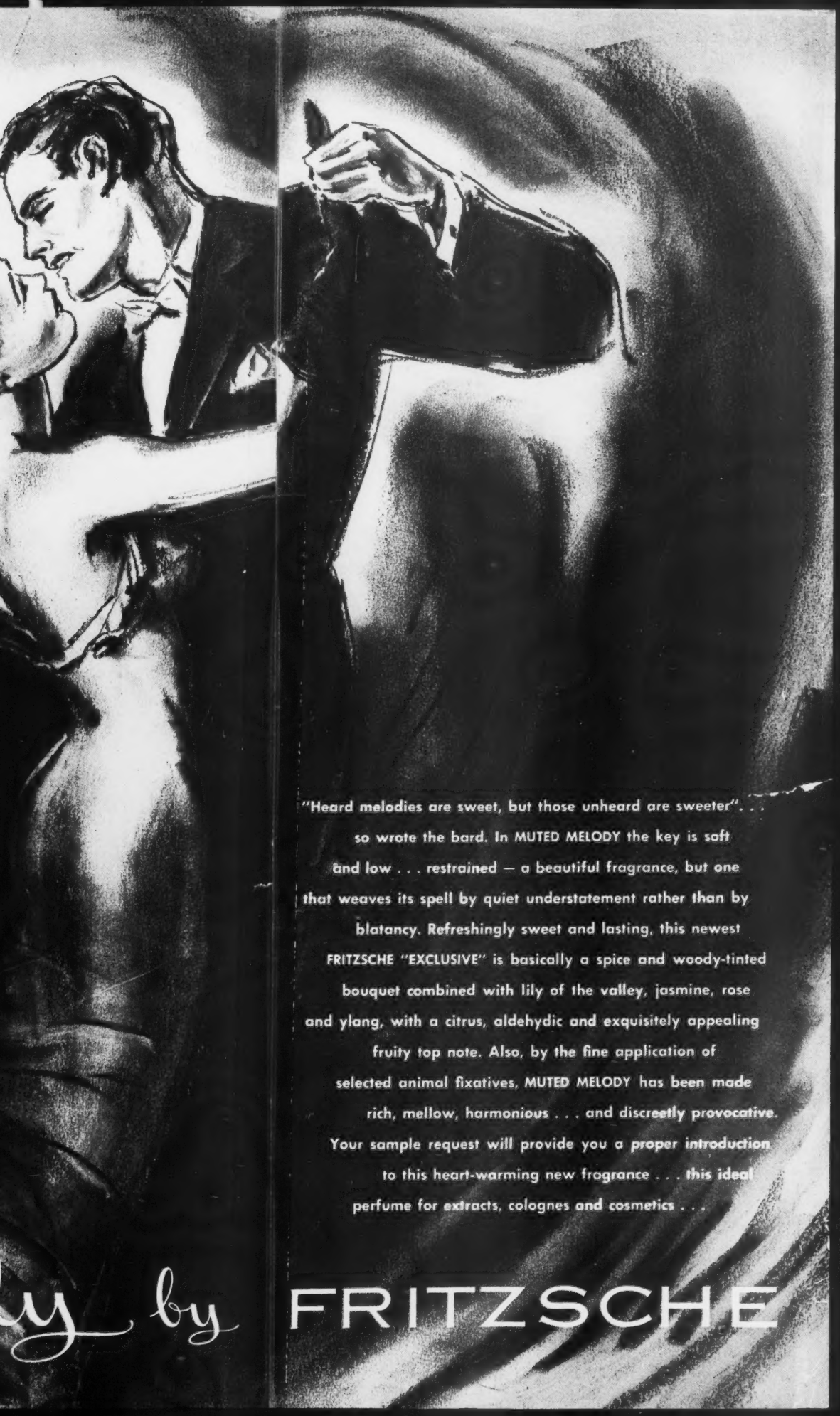
There are really two kinds of pharmaceutical flavoring problems. First and easy is the confectionery situation in which the medicinal has virtually no taste or the active ingredient is present in very low concentration; here the only problem is which flavor the patient may prefer. Far more important and unfortunately much more common is the mixture with its own intrinsic flavor, the kind that would gag a buzzard. This type of job requires skill, persistence and a patient long-suffering small panel. A covering or blending flavor is required to modify the taste so that it is possible for the patient to get the dose down; it is too much to hope that the preparation will become actually attractive.

What we need are a group of covering agents, like anise or chocolate as examples, that blend with and modify basically unpleasant effects and then permit further modification in the direction of attractive flavors. Some suppliers have made notable progress in this direction, but a great deal more work is still required.

Flavor-Timer

Winthrop Laboratories is exploiting a unique use of flavor in medicinal preparations and this idea is worthy of the widest application. The flavor is here used as an adjunct in double action preparations that are in themselves unusual. These preparations are Isuprel-Franol and

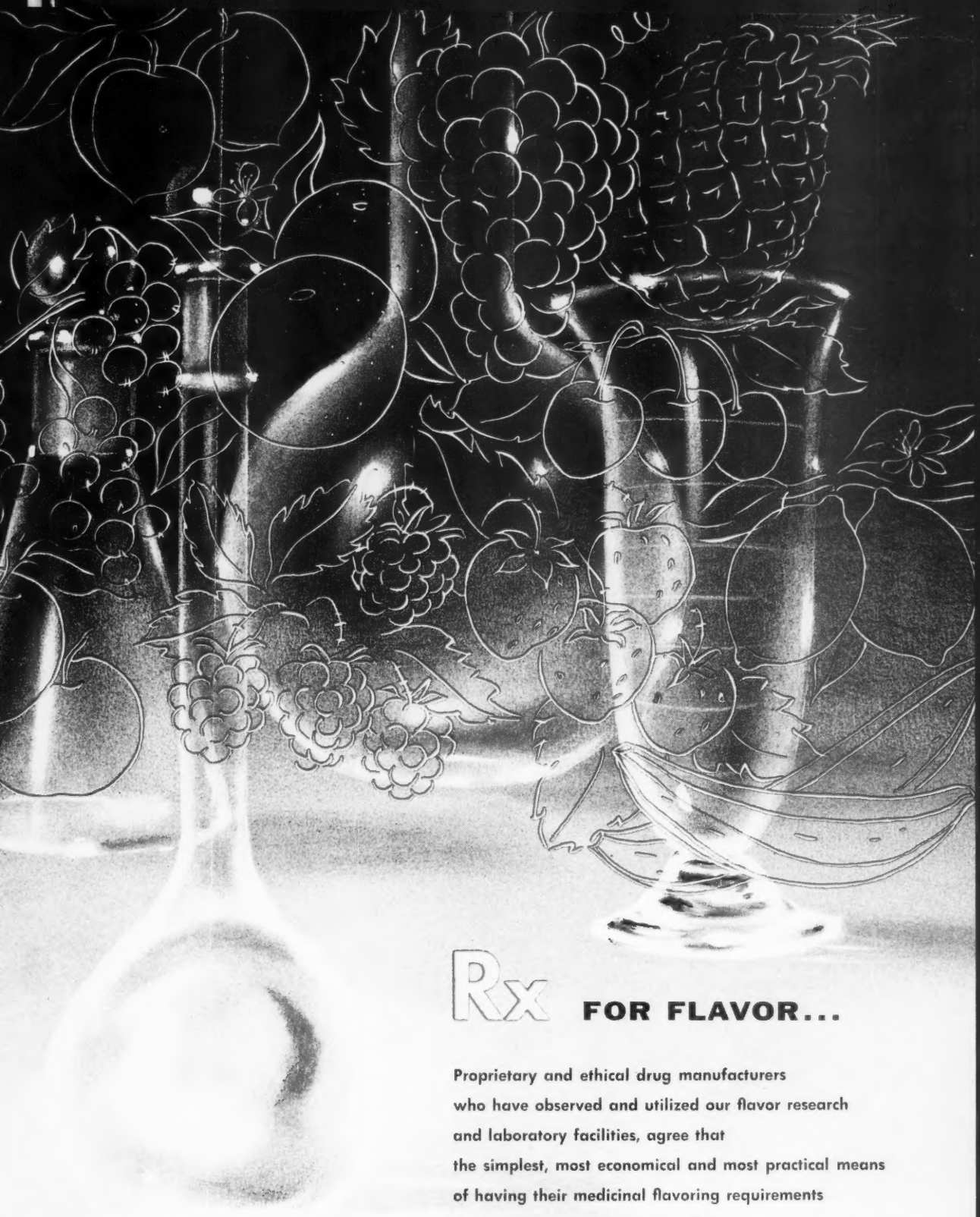
Muted Melody



"Heard melodies are sweet, but those unheard are sweeter". . . so wrote the bard. In MUTED MELODY the key is soft and low . . . restrained — a beautiful fragrance, but one that weaves its spell by quiet understatement rather than by blatancy. Refreshingly sweet and lasting, this newest FRITZSCHE "EXCLUSIVE" is basically a spice and woody-tinted bouquet combined with lily of the valley, jasmine, rose and ylang, with a citrus, aldehydic and exquisitely appealing fruity top note. Also, by the fine application of selected animal fixatives, MUTED MELODY has been made rich, mellow, harmonious . . . and discreetly provocative. Your sample request will provide you a proper introduction to this heart-warming new fragrance . . . this ideal perfume for extracts, colognes and cosmetics . . .

ly by FRITZSCHE

LET ITS MELODY
LINGER ON...
Melody



Rx **FOR FLAVOR...**

Proprietary and ethical drug manufacturers
who have observed and utilized our flavor research
and laboratory facilities, agree that
the simplest, most economical and most practical means
of having their medicinal flavoring requirements
correctly prescribed for, is to call in
FRITZSCHE flavor specialists and make them responsible
for developing flavors that will accomplish precisely
the desired end results.

A FIRST NAME IN FLAVORS
... SINCE 1871

FRITZSCHE BROTHERS, INC.

76 NINTH AVENUE, NEW YORK 11, N. Y.

Dilcoron, both three-layered tablets. The inner core provides preventive medication with rather slow onset of action and relatively long duration while the outer layer contains a pharmacologically related substance that is very quick acting but of only short duration. Between these is a flavor layer. Under ordinary circumstances the tablet is swallowed and the medication is slowly built up in the blood stream. In case of an acute attack of asthma (Isuprel-Franol) or angina (Dilcoron), the outer layer medication is most quickly utilized by buccal absorption, i.e., the tablet is slowly dissolved in the mouth and the medicinal is directly absorbed from the mucous membrane into the blood stream.

To make sure that the tablet is held in the mouth until all of the active ingredient has been released, the patient is directed to hold the tablet there until a lemon flavor appears and then disappears, when the tablet remaining can be swallowed. The flavor component is thus not added to the tablet to make it easier to take, but to tell the patient that the medicine is on its way.

Heliotropin

Heliotropin has for long been recognized for the close resemblance of its fragrance to that of the heliotrope according to A. G. Arend (*P. E.O.R.* 49:21, 1958). Its tendency to impart a slight pink color to creams and other white cosmetic preparations, as the substance itself turns pink, has been the subject of much research, with a view to overcoming this objection.

While it is indispensable in bases for heliotropes and violets, its reliable and persistent 'almond' odor has been considered only permissible in colored soaps, and other colored commodities. It is also supplied under the category of 'white heliotrope' when mixed with vanillin, while various efforts have been made to compound it so that the coloring tendency will be offset without interfering with the natural fragrance. Heliotropin is very largely, if not exclusively, obtained from safrole. The latter is converted to isosafrole which in turn is oxidized to heliotropin by slow additions of permanganate, followed by distillation.

Because of its disposition to decompose when heated, and also when exposed to light, it requires careful storage. Since a temperature of 35°C is sufficient to damage the perfume, it is frequently stored in as cool a place underground as possible during the summer months. As a further protective measure, heliotropin consignments when acquired are immediately dissolved in spirit, in order not only to preserve the full freshness of the perfume, but also to facilitate keeping it cool. The material itself can be completely ruined unless carefully melted.

While the basis of all artificial violet oils is ionone, the odor of the latter lacks body, and one of the commodities for backing this up, so that it does not lose its freshness, is concrete orris oil, together with benzyl iso-eugenol, but which latter is frequently supplanted by heliotropin. Much more importance attaches to heliotrope synthetic ottos, wherein heliotropin occupies the main basis, and represents from 40 to 50 per cent. The remainder is made up of 20 per cent geraniol from palmarosa oil, 10 per cent coumarin, and from 3 to 5 per cent each of balsam Peru, hydroxycitronellal, jasmin absolute, tuberose, and rose otto virgin, with other small additions. The name cherry-pie, probably arises from the almond nature of the perfume, where heliotropin again represents some 40 per cent, with 10 per cent each of rhodinol, benzoin, tuberose absolute, phenylethyl alcohol, 5 per cent vanillin, and four or five other additions. The perfume for the best classes of heliotrope soap differs in that it represents from 90 to 92 per cent of heliotropin, with 5 per cent vanillin, and small additions of eugenol, artificial oil of bitter almonds, and artificial musk.

A study of various fancy perfume compositions shows how popular is heliotropin, and its percentages are briefly as follows:

In safronal 40 per cent, passiflora 37 per cent, stephanotis 25 per cent, kleinhovia 20 per cent, hugonia 10 per cent, decumaria 10 per cent, wallflower 8 per cent, while other ranging from 3 to 5 per cent are nemisia, opoponax, lime blossom, dillenia, and 1.5 per cent in corylopsis. In flower perfumes it is represented in jacinthe, hyacinth, narcissus, and lilac at from 2 to 5 per cent, and in parma violets at 10 per cent, while in alcoholic perfumes it ranges from 2 to 3 per cent. With cosmetic fragrances, it is included in violet soap, violet talcum, hair brilliantines, hair washes, shampoos, dry shampoos, and heliotrope cachous.

Citrus Stripper Oil

Stripper oil is obtained as a by-product from the manufacture of citrus molasses according to J. W. Kesterson and R. Hendrickson (*Chemurgic Digest* 16:5, 1957). Citrus press liquor contains 0.20 to 0.50 per cent peel oil, and since this oil steam distils readily, 60 to 80 per cent of the oil present in the liquor can be recovered by flashing from 240° F. to atmospheric conditions. Stripper oil is usually a mixture of citrus oils, since the press liquor is obtained most often from a mixture of orange and grapefruit peel. It frequently possesses a fine citrus oil character, marred only by a slight distilled character, and contains very little of the waxy material ordinarily present in expressed citrus oils.

Since stripper oil contains over 95 per cent of d-limonene, it is considered one of the purest sources for this mono-cyclic terpene. A synthetic spearmint oil flavor, l-carvone, already has been manufactured from this oil. Considerable quantities of citrus stripper oil are bought yearly by the paint and varnish industry, where it is recognized as an excellent antiskinning agent. Other uses for this oil are as an ingredient of clear plastics, as a base for soap perfumes and as a penetrating oil.

The production of citrus stripper oil is potentially very large and the high purity and comparatively low cost suggests its use as a source material for fine organic chemicals.

Isuprel Mistometer (Winthrop) consists of 0.25 per cent Isuprel solution and inert propellant for 200 inhalations in a 10 cc. vial with built-in nebulizer. This aerosol preparation is intended for the immediate relief of asthma attacks.

Nets (Norwich) is acetyl-p-aminophenol available as 5 grain tablets in bottles of 30 tablets.

Medrol (Upjohn) is methyl prednisolone, available as 4 mg. tablets in bottles of 30 and 100 tablets.

Grisambrol is the product of patient research and skillful reconstruction of the components of ambergris, long prized and sought for its warm, earthy odor and fixative properties. Now this desirable addition to any perfume extract, soap or powder is always available, ever stable. With Grisambrol your range in achieving new notes, new effects is greatly increased. By the use of Grisambrol you give greater depth and warmth to your products, enhance their lingering effect on the skin, and extend their shelf life. Samples of Grisambrol and technical data in respect to its use available on request.

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NO LONGER NEED THE SHORE BE SEARCHED

now that FIRMENICH
achieves the complete synthesis
of ambergris in GRISAMBROL

Compounder's Corner

New Lanolin Derivatives

American Cholesterol Products, Inc. announces two new classes of lanolin derivatives, Ricilans, liquid wax esters, and Solulans, soluble acetylated lanolin derivatives.

The Ricilans are hydrophobic viscous liquid waxes composed of polymeric hydroxyesters derived by synthesis from the natural substances, lanolin and castor oil. They are 100 per cent active emollients, penetrants and spreading agents which offer unusual benefits when applied to skin and hair.

The Ricilans although posessing a high degree of unsaturation, are exceedingly stable and are true liquid waxes. The unsaturation greatly increases the degree of penetration, solubility, plasticizing effects and substantivity of the esters present. The result is a persistant emolliency and soft after-feel on skin and hair.

Because they retain the important and valuable features of both lanolin and castor oil while discarding the disadvantages of these parent substances, the Ricilans have obvious value in lipsticks (no bitter after-taste), aerosols, hair products, emulsions, silicone formulations, and many other cosmetic and pharmaceutical preparations.

The Solulans are new, polyoxyethylene derivatives of lanolin. These are 100 per cent active, nongreasy, clear liquid products with complete solubility in water, alcohol, many oils and solvents. The unique solubility and substantive properties of these lanolin derivatives are obtained by balancing hydrophilic polyoxyethylene with hydrophobic acetyl groups. The result is persistent emollient films, and solubilizing properties which lend themselves to the creation of entirely new effects in cosmetics, pharmaceuticals and aerosol formulations.

Water and alcoholic preparations and emulsions containing the Solulans exhibit the highly desirable soft, non-tacky after-feel characteristic of the Amerchol acetylated lanolin derivatives. The solulans are also active solubilizers for oils, providing clear to opalescent aqueous solutions of mineral oil, perfumes, essential oils, etc.

Silicone Protective Lotion

Silicone-based hand lotion not only eliminated a serious skin irritation problem at an electric motor company, but it also cut their motor rejection rate from 20 per cent to almost zero.

The company produces from 500 to 700 fan and instrument motors, daily. About 70 per cent of them are silicone-insulated, the rest Class B. All of them utilize advanced insulating components. Until about a year ago, almost every one of the 60 women winding these motors was suffering from one form or another of dermatitis, apparently caused by handling these components.

Gloves were tried, but they were too bulky for the delicate winding operation. Rubber gloves were too uncomfortable. The company also tested various industrial salves and ointments.

None prevented the rash, and some of them contaminated the motor insulation to such an extent that rejects rose to as high as 20 per cent of total production.

Late last summer, however, the company tried something new and different in hand creams: a cosmetic hand lotion formulated with Dow Corning Silicones. A heavy, greaseless liquid, the cream was simply rubbed into the hand and arms until it disappeared.

The motor rejection rate immediately dropped to near-zero. What silicone was deposited on the windings was neither a contaminant nor a conductor. Within a few days, the rash disappeared.

Foreign Quality Control

An acquaintance who has travelled extensively and lived abroad for extended periods has made a number of observations concerning American products in foreign countries that may be worth a little discussion. This a report from *one* person, which is a poor statistical sample, but there may still be a measure of validity in his remarks. He finds that American products manufactured abroad (not exported items) occasionally do not have the uniformity he is accustomed to at home; they may vary from too thick to press out of the tube to almost watery; they may exhibit unattractive turbidity; liquid emulsions may show signs of separation.

In a foreign manufacturing operation, there is no reason why manufacturing equipment, techniques and formulas should be any different from the domestic. Raw material differences may sometimes pose problems, but these can usually be ironed out. If this problem is a real one, I am inclined to ascribe it to differences in quality control, not in the quality of the quality control, but in its quantity. This is an expensive set-up, especially for necessary chemical analytical controls for raw materials and finished products and the size of the foreign manufacture may not be large enough to carry the cost of an adequate staff. In some instances it might even be possible and advisable to modify the formula for possibly slightly added cost of manufacture but with a greater reserve of stability and uniformity.

Monoglyceride Gels

When distilled monoglycerides (C_{14} or higher) are melted and added to water at the same temperature, a firm "gel" is formed as reported by G. Y. Brokaw and W. C. Lyman (*J. Am. Oil Chem. Soc.* 35:49, 1958). The gel, usually containing about 15 per cent to 25 per cent by weight of water, is not dispersible in water and is difficultly soluble in oil. If the excess water is decanted, the gel can be worked mechanically into an optically clear solid with a consistency resembling very heavy stopcock grease.

Upon cooling a gel below the melting point of the monoglyceride, crystals begin to form. If crystallization proceeds appreciably, the gel structure deteriorates, and a white creamy paste is produced.

Thus the lower temperature limit of stability is related to melting point; 1-monostearin (m.p. 81°C.) gels are stable above about 80°C., and 1-monoolein (m.p. 35°C.) gels are stable above about 20°C. Mixed monoglycerides, such as those from natural fats and oils, yield mixtures of gel and paste which are not readily dispersed in water.

Water is partially soluble in a pure molten monoglyceride. As water is added, the apparent melting point drops somewhat, then the viscosity of the molten material begins to increase. The viscosity becomes high enough at about 10 per cent and 15 per cent by weight of water (monoolein at 25°C.) to result in a soft nonpourable transparent "solid." As the ratio of water is further increased, the solid becomes firmer until no more water can be incorporated.

A typical gel preparation contains 22 per cent to 23 per cent of water. But by severe mechanical manipulation at room temperature, it has been possible to prepare a monoolein gel containing up to about 45 per cent of water without leaking. The gel may be of hydrogen bonded structure since preliminary measurements indicate a conductivity similar to that of the distilled water used and appreciably higher than that of a typical water-in-oil emulsion.

Two techniques were used to prepare gels in order to demonstrate the effect of temperature and of the ratio of water on their physical properties. In the first case the monoglycerides were added to water and stirred as the temperature was raised. Two transitions occurred in most cases, one in all cases. At about 10-15°C. below the melting point the monoglyceride smoothed into a creamy dispersion. Then the monoglyceride coagulated into a nondispersible lump which was transparent to translucent. This last conversion was called the "gel point".

By the second preparative technique the monoglyceride was heated to 96°-98°C., and vigorous agitation was begun. Boiling water was added very slowly, allowing time for any solid gel to be "dissolved." After the desired amount of water was added, with adequate allowance for evaporation, the mixture was set aside to cool before weighing. If monoolein was used, the product could be examined at room temperature.

Using monoolein, it was found that additions of 1 per cent to 5 per cent water lowered the melting point and produced a viscous, creamy fluid at 25°C. At water contents of 10 per cent the mixture was clearer optically, but the viscosity increased. At about 15 per cent water the mixture was non-pourable. It was not possible to incorporate more than about 40 per cent by weight (based upon the monoglyceride) of water by this technique. Cold manipulation of the resultant gel with additional water permitted a maximum incorporation of about 9 parts of water to 10 parts of monoglyceride.

The gel point varies with the chain length of the fatty acid in the monoglyceride and with its purity. On the other hand, the relatively impure mono- and diglyceride mixtures do not gel.

The addition of 20 per cent triglycerides was as effective as the addition of 40 per cent diglycerides in preventing gel formation under the experimental conditions. It is thus possible to use higher concentrations of monoglyceride in aqueous systems without gelation by using monoglyceride - triglyceride blends than by using mono- and diglyceride mixtures.

The solubility of water in blends of monoglyceride and triglyceride is usually about 10 per cent to 25 per cent of the monoglyceride content (2 to 5 mols. of water per mol. of monoglyceride). When water is added to a mixture of 50 per cent monoolein and 50 per cent of cottonseed oil, the monoglyceride solubilizes the water in the cottonseed oil and also water-solubilizes the monoglyceride. Similar effects have been obtained with hydrocarbon solvents as well as with triglycerides at appreciably lower concentrations of monoglyceride.

Many water-soluble materials can be dissolved in the water before putting it into the oil solution. Organic acids, such as ascorbic and nicotinic acid, are readily dissolved whereas inorganic salts, such as sodium chloride, are much less soluble.

Gels can be dissolved in solvents, such as ethanol and petroleum ether. This is to be expected for ethanol since liquid distilled monoglycerides are soluble in 50 per cent aqueous ethanol.

It was also possible to dissolve 15 per cent by weight of water into 30 per cent to 50 per cent solutions of monoolein in petroleum ether (Skellysolve B). Cloudiness developed in all cases before 25 per cent water addition had been completed.

Conar Troches (Massengill) contain 5 mg. of Noscapine, 5 mg. of pheniramine maleate, 2.5 mg. of phenylephrine hydrochloride and 0.1 mg. menthol in each troche and are offered for the relief of coughs and upper respiratory congestion. The newly designed polyethylene closure contains 12 troches.

Incremin with Iron (Lederle) is a cherry-flavored dietary supplement containing vitamins B-1, B-6, B-12, lysine, ferric pyrophosphate and iron, available in 4 ounce bottles.

Furoxone (Eaton) is now available for the treatment of human enteric infections as scored, brown tablets containing 100 mg. of furazolidone in bottles of 20 or 100.

Paraflex (McNeil) is 5-chlorobenzoxazolinone, a skeletal muscle relaxant. The preparation is available as 250 mg. scored tablets in bottles of 50 tablets.

Mycifradin N (Upjohn) contains in each tablet 0.5 gm. of neomycin sulfate and 125,000 units of nystatin. It is available in bottles of 20, 100 and 500 tablets.

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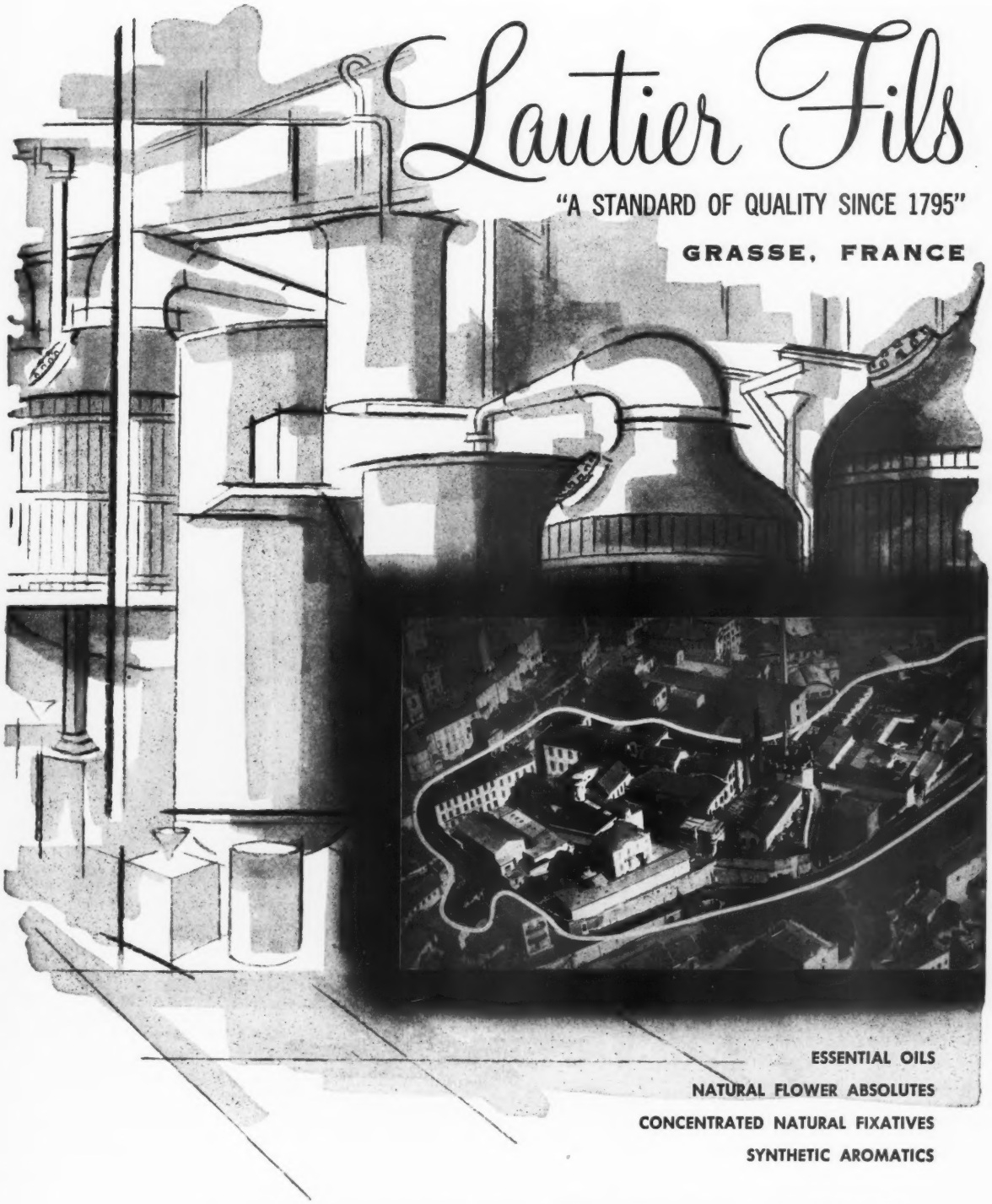

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Industry's Books . . .

Oral Microbiology And Infectious Disease, *by George W. Burnett, B.A., M.A., and Henry W. Scherp, B.S., M.S., 589 pp., The Williams & Wilkins Co., Baltimore, (1957), cloth,* **$11.**

Despite the lack of exact information concerning many of the oral microrganisms, a wealth of significant material is available for a textbook intended to introduce to the student of dentistry those aspects of infectious disease that pertain to his profession. The present volume emphasizes the basic principles of microbiology as they relate to infectious disease and illustrates them freely by prototypical examples. The authors have integrated into this book, for the medical student and physician as well as for the dentist, that borderland of oral microbiology which comprises the oral manifestations of infections progressing primarily elsewhere and systemic infections originating in the oral cavity. Because of this material the present volume should be useful to the student of medicine also.

Atomic Energy In Medicine, *by K. E. Halnan, 157 pp., Illus., Philosophical Library, New York, (1957), cloth,* **$6.**

The radiation emitted by the 'ash' or waste products, produced in the nuclear reactor furnaces of nuclear power stations and in the reactors for nuclear energy research and those used for the production of the plutonium used in the manufacture of atomic bombs, is also being increasingly used in medical therapy to combat cancers and other growths. The various types of accelerators, or 'atom smashing' machines, are likewise contributing in growing numbers, not merely to research in nuclear physics, but also to an increasing amount of medical therapy. Also radiation is a potential danger to all kinds of living tissue. Dr. Halnan in this book covers each of these fields in some detail clearly and authoratively, describing at the same time the background of nuclear physics against which each aspect of this new field of atomic medicine must be set if it is to be truly understood.

Quantitative Pharmaceutical Chemistry, *by Glenn L. Jenkins, Ph.D., John E. Christian, Ph.D., and George P. Hager, Fifth Ed., Ph.D., The Blakiston Div., McGraw-Hill Book Co., Inc., New York, (1957), 552 pp., cloth,* **$8.50.**

As in the past the purpose of this book is to furnish students of pharmacy with a systematic course covering the quantitative chemical and physical methods official in the United States Pharmacopeia and the National Formulary, to classify the large number of official procedures according to type methods of analysis, and to present some of the generally applicable, nonofficial methods of analysis which are widely used in pharmacy.

Sixth Symposium (International) on Combustion, *Published for The Combustion Institute by Reinhold Publishing Corp., New York, (1957), 943 pp., Cloth,* **$28.**

Here are the most up-to-date developments in the combustion field as presented by 216 authors from 10 countries during the Sixth International Combustion Symposium held at Yale University in August, 1956. This collection of 129 papers provides an invaluable and stimulating source of new data, information on theoretical concepts, and principles of engineering applications for those working on the many aspects of combustion—chemical, kinetic, aerodynamic, and thermodynamic.

Catalysis In Practice, *Edited by C. H. Collier, duPont, 153 pp., pocket size, Reinhold Publishing Corp., New York, (1957), cloth,* **$3.95.**

This is a collection of papers originally presented in Philadelphia in April, 1957, under the auspices of the Philadelphia - Wilmington Section of the American Institute of Chemical Engineers and the School of Chemical Engineering, University of Pennsylvania. Included are concise chapters on catalyst choice and commercial preparation; fixed bed systems and moving bed processes; economics of catalyst use; operating problems in processing; and a helpful appraisal of trends and prospects in catalysis.

Protein Chemistry, *by Sidney W. Fox, Professor in the Chemistry Department, Florida State University, and Joseph F. Foster, Professor of Chemistry, Purdue University, 459 pp., John Wiley & Sons., Inc., New York, (1957), cloth,* **$9.50.**

This book treats the fundamental aspects of protein chemistry in a logical and unified manner and indicates ways in which the knowledge is basic to other fields, such as biology, nutrition, and food technology. In their step-by-step development of the subject, the authors cover the amino acids, peptides, and proteins, in that order. They lead the reader into the original literature through listings of important reading references at the end of each chapter. This balance between the organic, physical, and biological aspects of protein chemistry is a good feature which will appeal to biologists as well as chemists who are interested in the proteins.

Manual of Pharmaceutical Law, *Second Ed., William Pettit, Lecturer in Pharmaceutical Jurisprudence, University of Pittsburgh, 303 pp., The MacMillan Co., New York, (1957), cloth,* **$4.50.**

Rewritten throughout, this second edition mirrors the recent changes in the statutes and presents federal and state law of pharmacy in its up-to-date aspects. Discussions of international control of narcotics, employment laws, and laws concerning weights, taxes, and zoning have been added; laws and cases from more states and regions of the United States have been cited; laws printed in the appendixes have been enlarged and reflect new legislation.

Textile Chemicals And Auxiliaries, *Edited by Henry C. Speel, and E. W. K. Schwarz, 2nd Ed., Reinhold Publishing Corp., New York, (1957), 545 pp., cloth,* **$13.50.**

This is a compilation of descriptive material pertaining to all commercially important chemicals used in the processing of textiles. The first eight chapters are grouped under the heading, "The Nature and Processing of Fabrics"; the remaining chapters deal with "Raw Materials in Fabric Processing." Major emphasis is on organic chemicals and particularly on surface-active agents (surfactants).

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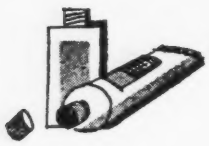

Advancing Therapy

Orinase

Successful control of diabetes in 78 per cent of patients who show first symptoms as adults is possible with Orinase, oral anti-diabetic treatment.

Dr. Ernst F. Pfeiffer, assistant professor of medicine and chief of the diabetes clinic, University of Frankfurt, now in the United States as a Fulbright scholar and research fellow at Harvard Medical College, described the results of two years of clinical and experimental studies with oral antidiabetic agents in Germany to an audience of almost 500 physicians. The German studies, as well as work now being done here, indicates clearly that Orinase, developed in the United States by The Upjohn Company, works by stimulating the manufacture and release of natural insulin in the patient's own body.

In the large-scale study, 758 patients were observed for a period of up to two years. Only 8 per cent failed to respond to a therapeutic trial with Orinase. Another 7.8 per cent failed to maintain satisfactory control of their diabetes after a few months of treatment, and were described as "secondary failures." Minor undesirable side effects, such as skin rashes, were found in only 1.9 per cent of the patients.

Dr. R. Levine of Michael Reese Hospital, noted that Dr. Pfeiffer's experience confirms that of major diabetic clinics and research centers in the United States.

Numerous concepts and theories of action have been proposed and then eliminated on the basis of laboratory studies. Recent studies, according to Dr. Pfeiffer, now give what is regarded as definitive evidence that Orinase stimulates the manufacture and release of natural insulin by the patient's own insulin-producing beta cells.

New Antacid

The nearest approach to the ideal yet attained by any individual antacid is probably active alumina gel. The chief drawback of the material is the difficulty of maintaining activity when the gel is dried. A secondary disadvantage is the mildly constipating effect sometimes noted as a side-effect. Whilst the latter disadvantage may be remedied by admixture of magnesium hydroxide or carbonate with the alumina, loss of activity may be accelerated by the higher alkalinity of the magnesium compound when the tableted mixture is stored for long periods.

It has, however, been discovered that, by a process of molecular co-precipitation of magnesium and calcium carbonates in the presence of alumina, the activity of the alumina may be maintained indefinitely in the dry state. That co-precipitate, known as aluminum triple precipitate, has been found in *in-vitro* tests in the manufacturer's laboratory (Beacham Maclean, Ltd.) to fulfil all the requirements of the ideal antacid.

Aluminum triple precipitate (ATP) according to L. J. Edwards, (*Chemist and Druggist* 1957, p. 647) is a molecular co-precipitate of hydrated alumina, calcium carbonate and basic hydrated magnesium carbonate in which the three components are precipitated simultaneously under controlled conditions designed to bring out the most desirable features of each component. The co-precipitation technique insures that the full neutralizing capacity of the components is maintained to the highest degree, even when the ATP is dried and tableted. When hydrochloric acid is slowly added to a mechanical mixture of magnesium carbonate, calcium carbonate and aluminium hydroxide, it reacts with the three components in that order; when added to ATP in the same manner it reacts with the three compounds simultaneously.

Tablets of ATP are so designed that acid already in the stomach is immediately neutralized by the simultaneous action of most of the calcium and magnesium, together with some of the aluminum, while acid subsequently secreted is neutralized by the excess alumina in its active and colloidal state, thereby keeping the stomach contents within the zone of *pH* 3.5–5.0, within which digestion can continue without discomfort. Over-alkalization—a drawback of many oldfashioned antacid remedies—is thereby avoided.

In-vitro experiments with ATP provide the results expected of such an active antacid, but as that type of experiment may often be misleading, it was decided to conduct a large-scale clinical trial with tablets each containing gr. 6 of ATP. In order to get an accurate picture of the activity of the tablets *in vivo*, it was decided to use the hyperacidity associated with pregnancy as the nearest approach to a constant clinical condition. Heartburn and acid regurgitation are the presenting symptoms.

A test was accordingly arranged under the supervision of G. W. Garland, (obstetric physician to St. Thomas's and Lambeth Hospitals) with the object of determining the efficacy of ATP tablets in cases of indigestion during pregnancy.

Seventy patients were treated during the period of the test. A dosage of two tablets at a time was found to be adequate. Of the seventy cases, sixty (86 per cent.) gave the product their unqualified approval, often with enthusiasm.

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U.S.I. CHEMICAL NEWS

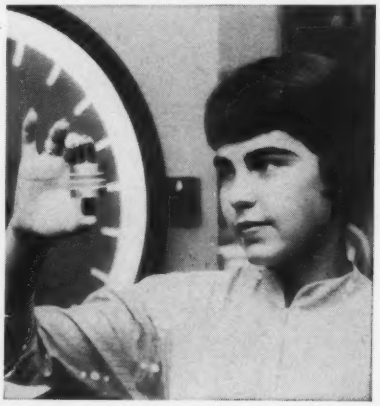
March ★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1958

Polyethylene-Brass Bonds Possible with New Adhesive

A new adhesive developed by Bell Telephone Laboratories and reportedly able to resist a pull of 1,000 psi is being used to bond polyethylene directly to brass, brass-plated metals, and rubber. It is based on a compound described as partly hydrogenated polybutadiene, which is vulcanized by the addition of other materials. Any degree of unsaturation of the polybutadiene from 3-30% is reported to provide excellent adhesive action.

Temperatures from 250-350 F and pressures of 100 psi or less are required for bonding. A layer of the adhesive 2 or 3 mils thick is desirable. This layer can be brushed or sprayed on, or inserted between the materials to be bonded as a thin, prefabricated sheet.

Possible uses include bonding of polyethylene to brass in submarine cable amplifiers for underwater phone cables, linings for tanks and plating racks.



Sandwich of brass, polyethylene and rubber shown here is held together by new adhesive. It can support about 2,000 pounds.

ISOSEBACIC® Acid Synthesis To Be Described At April ACS Meeting

A paper on U.S.I.'s new dibasic acid synthesis is to be presented at the symposium on alkali metals, being held at the 133rd national ACS meeting in San Francisco, April 13-18.

The process described in the paper was developed for use in the company's new ISOSEBACIC® Acid plant which is soon to go on stream. In this synthesis, butadiene is reacted with very finely dispersed sodium to form disodiooctadiene — an organometallic compound. Carbonation, hydrogenation and acidification then yield three major products — sebacic acid, 2-ethylsuberic acid and 2,5-diethyladipic acid. The mixture of the three has been trade named ISOSEBACIC Acid by U.S.I. and is finding application as a vinyl plasticizer and as an intermediate for many plastic applications. Until the development of this synthesis, 2-ethylsuberic and 2,5-diethyl-

MORE

National Petro-Chemicals Corp. Becomes a Wholly-Owned Subsidiary of National Distillers

Giant Tuscola, Illinois Plant Continues Under U.S.I. Management

Panhandle Eastern Pipe Line Company's 40% minority interest in National Petro-Chemicals Corporation has been transferred to National Distillers, which thus becomes sole owner. Panhandle has acquired 1,500,000 shares of National Distillers common stock in exchange.

National Petro owns and operates a large integrated petro-chemicals plant at Tuscola, Illinois. U.S.I. Division of National Distillers will be responsible for management of this chemical complex as it has been in the past.

Expansion of National Petro beyond the original plan was one factor that led to the transaction. As originally conceived, Petro's basic raw materials were hydrocarbons extracted from Panhandle's natural gas pipeline at Tuscola. However, the company's new polyethylene plant at Houston will use ethylene purchased from another source.

Nixon Named Petro Vice President

John W. Nixon has been elected Vice President of National Petro, and manager of all National Distillers operations at Tuscola, including the Petro and U.S.I. facilities. Dr. Robert E. Hulse, National Distillers Executive Vice President, was named National Petro Executive Vice President, and Robert Cornwell, U.S.I. Vice President in Charge of Production, has also been named a Petro Vice President.

Since 1951, Petro has been producing ethylene, ethyl alcohol, ethyl chloride, ethyl ether, LPG and later polyethylene at Tuscola. It supplies hydrogen to U.S.I.'s ammonia production facilities. Petro also has the facilities to manufacture other related bulk chemicals on long term contract basis if the demand arises.

Panoramic view of a portion of the National Petro-Chemicals Corporation plant. Ethyl chloride, ethyl ether and ethyl alcohol production and storage facilities are visible in the background.

Attention: Users of Taxpaid Alcohol for Nonbeverage Purposes

The Alcohol and Tobacco Division of Internal Revenue has recently issued Industry Circular No. 57-37 covering the filing of nonbeverage drawback claims on taxpaid alcohol by manufacturers of nonbeverage products. This circular suggests that such claims be delivered personally to the office of the assistant regional commissioner (alcohol and tobacco tax), or sent by registered or certified mail, with postmarked receipt.

The suggestion has been made in order that the time of filing claims may be more readily established. It appears that in the past some claims placed in the mail within the 3-month filing period have not been received in proper time. Without proof of the time of filing, the Division has been unable, under the law, to allow refund in such cases.

New Technique for Bonding Non-Ferrous Metals Employs Alkali Metal Chloride Mix

Non-ferrous metals which are difficult to join by welding, brazing or soldering can now be bonded by a new and inexpensive process. A solder-like wire, consisting of a mixture of zinc, lithium, potassium and sodium chlorides wrapped in a zinc sheath, is applied to the metal surfaces to be joined after they have been heated to 800°F, the melting point of the wire.

The bond formed is chemical — a eutectic mix of zinc, the alkali metals, and the metals being joined. It is claimed to be strong, corrosion-resistant, and with electrical, physical and chemical properties similar to the metals concerned. Similar or dissimilar surfaces can be bonded using the new technique.

Among the materials which, it is claimed, can be joined by this technique are titanium, zirconium, aluminum, copper, magnesium, zinc, brass, silver, gold, beryllium, platinum, osmium, thorium, uranium, vanadium, tungsten, and some types of steel.

March ★ **U.S.I. CHEMICAL NEWS** ★ 1958

CONTINUED

ISOSEBACIC

adipic acids were relatively unknown.

Reaction conditions are very closely controlled to dimerize butadiene. If polymerization of butadiene were to occur, yields would be drastically reduced.

The paper describes prior art on the synthesis and general laboratory procedure, discusses the reaction and isomer distribution, and mentions other applications of the synthesis. It will be presented by Dr. Charles E. Frank, Manager of U.S.I. Organic Research.

Other Alkali Metals Symposium Topics

Some of the other topics planned for the alkali metals symposium are: New developments in liquid metals handling equipment; alkali metals as polymerization catalysts; sodium as a nuclear reactor coolant; manufacture of titanium by sodium reduction; alkali metals derivatives as components of Ziegler-type polymerization catalysts; manufacture of synthetic natural rubber, and large scale manufacture of sodium borohydride.

Paper on Titanium Patent Literature

A paper entitled "Survey of Patent Literature on Preparation of Titanium Metal" will be given for the Division of Chemical Literature at the San Francisco ACS meeting. This report, to be presented by Dr. Janet Berry who manages U.S.I.'s patent section, will graphically illustrate the great growth in titanium technology from patents obtained during the past 35 years.

Dr. Janet Berry and Dr. Charles Frank will present papers at the April ACS meeting in San Francisco.

Zirconium Provides Bright Light in Tiny Flashbulb

A new photoflash bulb is now on the market which is one-fourth the size of conventional bulbs, yet provides the same amount of light. In addition, the new photoflash gives faster light, and is therefore claimed to be the first bulb which can satisfy both box camera users and professionals who require speed.

These results have been accomplished by replacing shredded aluminum with shredded zirconium. The latter metal oxidizes more efficiently, giving 50% more light per unit weight of oxygen consumed. It creates lower pressure at flash peak, permitting higher initial pressure for faster light. It burns cleaner, blackens the bulb less, and so gives more light.

The new bulb costs no more than regular photoflashes, even though zirconium is currently more expensive than aluminum. Increased production by zirconium suppliers like Mallory-Sharon Metals (owned ⅓ by U.S.I.) is expected to make zirconium available in larger quantities for this and other uses.

Methionine Overcomes Urinary Infections

Large doses of methionine have cleared up stubborn urinary tract infections which are resistant to antibiotics or other therapy, according to experiments at an eastern medical school.

Upon oral ingestion, methionine acted as an urinary acidifier, and reduced both the pH and the bacterial count of the urine. After methionine intake, the urine contained an antibacterial substance not present before methionine was given.

Have you a new product to tell the world about?

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TECHNICAL DEVELOPMENTS

Information about manufacturers of these items may be obtained by writing U.S.I.

Polyethylene containers can now be coated with a varnish said to cut static, give high sheen, prevent scuffing. Another coating now available is claimed to reduce oil permeability and oxygen diffusion, give glass-like clarity. **No. 1331**

Ceramic woven fabrics for high-temperature insulation have been introduced which will withstand heat up to 2,000°F., according to producer. Made of aluminum silicate fiber, they are lightweight, flexible, have low bulk factor. **No. 1332**

New silicone compound containing salicyl groups in its structure can now be obtained. It is said to provide sunscreening action, does not wash off easily in water. **No. 1333**

Porous teflon filter cups 12 inches high by 5 inches I.D. can now be obtained for atomic energy use. These cylindrical cups are molded in one operation, are porous in the lower 7 inches only. They remove particles over 3 microns. **No. 1334**

Acylase I, an enzyme obtained from hog kidneys and capable of separating many synthetic dl-amino acids, is now available in developmental quantities. Enzymatic resolution is said to be more economical than other techniques. **No. 1335**

New type of stirring paddle combines centrifugal force, suction, shearing action, counter whirl. Claimed to promote high flow velocity through entire vessel, ensuring maximum dispersion with minimum particle size. **No. 1336**

Acrylic emulsion paint behavior under test exposure in every climatic region in the U. S. is reported in a 56-page brochure just published. Detailed summaries, tables and photos on 3,000 tests which began in 1952-53 are included. **No. 1337**

New infrared analyzer has been announced for measuring concentrations of gases of medical interest such as carbon dioxide, nitrous oxide, cyclopropane, etc. It is expected to be used in such work as pulmonary investigations and research on new anesthetics. **No. 1338**

A method for restoring the flavor of processed foods by adding flavor enzymes is described in a reprint now available. The studies described were carried out on cabbage and related foods, but the method works with many other foods. **No. 1339**

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Pharmaceutical Products: DL-Methionine, N-Acetyl-DL-Methionine, Urethan USP, Riboflavin USP, Intermediates.

Heavy Chemicals: Anhydrous Ammonia, Ammonium Nitrate, Nitric Acid, Nitrogen Fertilizer Solutions, Phosphatic Fertilizer Solution, Sulfuric Acid, Caustic Soda, Chlorine, Metallic Sodium, Sodium Peroxide, Sodium Sulfite, Sodium Sulfate.

Reactive Metals, Oxides and Salts: Zirconium, Zirconium Oxide, Zirconium Tetrachloride, Titanium, Hafnium, Hafnium Oxide, Hafnium Tetrachloride.

Development Chemicals: Ethylaluminum Sesquichloride, Methylaluminum Sesquichloride, Monomethyl Hydrazine, Triethyl Aluminum, Trimethyl Aluminum, Unsymmetrical Dimethyl Hydrazine.

Animal Feed Products: Antibiotic Feed Supplements, BHT Products (Antioxidant), Calcium Pantothenate, Choline Chloride, CURBAY B-G®, Special Liquid CURBAY, VACATONE®, Menadione (Vitamin K_3), DL-Methionine, MOREA® Premix, Niacin USP, Riboflavin Products, Special Mixes, U.S.I. Permadry, Vitamin B_{12} Feed Supplements, Vitamin D_3, Vitamin E Products, Vitamin E and BHT Products.

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Gordon Conferences

Two programs for Gordon Conferences of interest to pharmaceutical investigators have now been made available. These are the Conference on Food and Nutrition to be held August 11 to 15, 1958 at Colby Junior College in New London, New Hampshire and the Conference on Steroids to be held at the New Hampton School in New Hampton, New Hampshire July 28 to August 1. At the Steroid Conferences under the Chairmanship of Gilbert Stork, the speakers will be D. H. R. Barton, C. Djerassi, A. Bowers, B. C. L. Weedon, A. Eschenmoser, K. Wiesuer, E. P. Oliveto, L. H. Sarett, R. B. Woodward, W. S. Johnson, O. Jeger and Josef Fried. Speakers at the Food and Nutrition Conference, with Robert H. Silber as Chairman, will be Aline U. Orten, Alfred E. Harper, James M. Hundley, Theodore Van Itallie, Roselyn Alfin-Slater, Albert Behnke, F. N. Andrews, Franklin C. McLean, R. R. Williams, O. L. Kline, Olaf Mickelson, Josef Warkany, Josef Brozek, Mark Hegsted, Calvin Woodruff, Arnold Schaefer, William J. Darby, S. H. Witter and Kenneth Beeson.

The Conferences were established to stimulate research by an informal type of meeting consisting of scheduled lectures and free discussion groups. Meetings are held mornings and evenings, with afternoons available for participation in discussion groups of recreation. Individuals interested in attending a Conference are requested to send their applications to the Director and attendance at each Conference is limited to 100. Request for attendance at the Conferences, or for additional information, should be addressed to W. George Parks, Director, Department of Chemistry, University of Rhode Island, Kingston, Rhode Island.

I. V. Fat Emulsions

R. C. Bozian et al (*Metabolism* 6:703, 1957) tested 2 fat emulsions. These were administered in 350 separate infusions to 96 patients with various acute and chronic diseases. The composition of the emulsions was as follows: cotton seed oil, 15 per cent; soybean phosphatide, 1.2 per cent; pluronic F68, 0.3 per cent; glucose, 4 per cent; and water. Six hundred cubic centimeters of each emulsion contained 90 Gm. of fat and provided about 900 calories. Infusions were administered at a rate of 1 cc. per minute for 1 hour and completed at a rate of 3 to 5 cc. per minute over the next 2 to 4 hours. Reactions of colloid type and fever, which occurred during or after administration of fat, and their rates were tabulated. Results indicated that the presently available preparation is safe enough to use. The incidence of reactions is not an important contraindication. Short-term administration for 5 to 7 days must be differentiated from long-term administration. There has been insufficient experience with long-term administration to evaluate this aspect of administration.

An emulsion containing 15 per cent cotton seed oil was used by F. W. Preston et al. (*Metabolism* 6:-758, 1957) for 644 infusions given to 30 seriously ill patients undergoing surgery, many of whom were unable to take nourishment by mouth. The average number of infusions received by a patient was 21.5. Daily infusions of 600 cc. given in about 2.8 hours were well tolerated, and reactions were minor. Of the 644 infusions, 120 (18.6 per cent) were associated with increases in temperature of 1.1 F or more, and 74 infusions (11.5 per cent) were associated with other reactions, such as nausea, anorexia, vomiting, dizziness, and shaking chills. The shaking chills were the severest reactions and were observed in 4 patients. Liver function, as revealed by bromsulphalein retention, cephalin flocculation, and thymol turbidity tests, was impaired after about 2 weeks of infusions but tended to return to the preinfusion state after the emulsions were withdrawn.

Comment: It is apparent to those who have followed the literature on this subject, or worked in the field, that the reaction rate has remained relatively stationary in recent years. As clinical investigators have become more familiar with the product, the number and severity of reactions have declined very little, but the investigators seem more willing to disregard small febrile responses.

Pregnancy Hormone

New reports on the use of the hormone, relaxin, to ease delivery and reduce complications of childbirth were presented in the "Conference on the Uterus" sponsored by the New York Academy of Sciences.

Dr. Charles Birnberg of the Brooklyn Jewish Hospital described his work with a form of relaxin, and declared it to be a valuable adjunct to the obstetricians armamentarium. Properly used in conjunction with oxytocin the most painful stage of labor can be shortened to an average of 30 minutes for mothers who have already had a previous child. For mothers having their first child the average delivery time is about 60 minutes. According to Dr. Birnberg these time intervals represent a significant reduction (50-60 per cent) over those found in patients treated with oxytocin alone.

Similar success was obtained using relaxin and oxytocin for the rapid induction of labor.

The certainty of results following the proper use of relaxin and oxytocin is of great help in determining whether delivery can be accomplished without having to resort to surgical techniques. If delivery is not accomplished within the prescribed times it is quite certain that normal vaginal delivery cannot take place and surgical methods will be required.

Combid (SKF) is a combination of Compazine tranquilizer and Darbid anticholinergic in Spansule dosage form. Each capsule contains 10 mg. of prochlorperazine and 5 mg. of Darbid (isopropamide iodide or 3-carbamoyl-3, 3-diphenylpropyl diisopropylmethyl ammonium iodide). The preparation is available in bottles of 30 capsules. Darbid alone is available as 5 mg. tablets in bottles of 50.

Dilcoron (Winthrop) is a tablet preparation for the prophylactic treatment and immediate relief of anginal attacks. It ingeniously consists of an outer jacket containing 0.4 mg. of nitroglycerin and an inner core containing 15 mg. pentaerythritol tetranitrate; for prophylactic treatment one tablet is swallowed four times daily while for relief of the acute attack the tablet is held sublingually. There is an intermediate citrus-flavored layer, so that the patient swallows the tablet when the flavor disappears, to prolong vasodilator action. The preparation is available in bottles of 100 tablets.

Skin Research

Cholesterol in Skin Fats

The lipid film of the skin surface derives from the keratinizing epidermis and the sebaceous glands. The bulk of cholesterol stems from the keratinizing epidermis. Thus, the concentration of cholesterol in an ether extract of the skin surface will be an expression of the relative rate of production of both sebum and keratinized cells.

D. B. Windhorst and R. C. Foster, Jr. (*J. Inves. Dermat.* 29:339, 1957) have demonstrated that the amount of total sterols in scalp fat is lower in balding men as compared to nonbalding men and to women. This may mean simply that balding individuals have an increase in sebaceous gland secretions which is poor in cholesterol; or conversely, they may have a relative decrease in epidermal contribution. The latter possibility, a relative decrease in keratinization in balding men, is attractive since balding scalps universally show a decrease in one form of keratinization—hair formation.

The esterified portion of the total sterols has been shown to be present in relatively constant amounts in the scalp surface fat of all individuals, both in balding men and nonbalding men as well as in women. There is also indication that this fraction in lipid from non-hairy skin is about the same as that in the scalp fat. All this could well mean that the esterification mechanism of sterols in the skin surface lipids is under control of a system which operates independently of local factors, particularly independently of male-pattern balding. Also, it is remarkable that the concentration of sterol esters is independent of the total amount of sterols.

Except for the esterified portion, the sterols derived from glabrous skin do not follow the pattern of those of the scalp. The differences in the free and total sterols in scalp fat observed between balding and nonbalding individuals must therefore be a true reflection of local change.

The factor of age is an important consideration. The oldest subjects in any subgroup have the lower total and free sterol values in the fat from the scalp. If this trend is primarily evidence for aging rather than for balding, then one may say that younger balding males show a sign of premature aging in this respect.

Creme Natale

From a press release by DuBarry: "DuBarry announces the introduction of two new beauty preparations —CREME NATALE and ELIXIR NATALE—a revolutionary cream and lotion formulated with PLACENTINE—amazing *biological* substance that actually works on the *cellular* layer of the skin. PLACENTINE, a highly concentrated placenta extract, is a combination of the very proteins, vitamins, enzymes and esters that help protect skin cell growth *before birth.*

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Comment: Dear Don, Did you bring back PLACENTINE from France last summer?

The Epithelial Barrier

It is evident from experiments by S. Monash (*J. Invest. Dermat.* 29:-367, 1957) that practically the entire thickness of the stratum corneum participates in the formation of the epithelial barrier to percutaneous absorption of electrolytes. One may except the outermost layer or two of stratified cells which have begun to loosen from the rest of the stratum corneum prior to exfoliation. This outermost layer permits penetration as shown by the easy staining of the surface to dyes. One may also except the innermost layer or two of stratum corneum cells which have just been formed from the stratum granulosum and have not yet developed resistance to penetration.

A comparison of the time required to produce anesthesia on normal skin and on skin stripped 15 times shows a diminution with 2 per cent Dorsacaine base solution, 2 per cent Xylocaine base solution and 2 per cent Pontocaine base solution, of one hour and ten minutes, fifty-five minutes, and forty-five minutes, respectively. With 5 additional strippings, the further diminution in time is negligible; amounting to either nothing or five minutes at the most. The outer 15 strippings therefore form the principal barrier to the penetration of the 2 per cent base solutions. Similarly, with the salt solutions (Fig. 4), the diminution in time required to produce anesthesia with 2 per cent Dorsacaine HCl solution no normal skin from that on skin stripped 15 times was two hours; a further stripping of 5 times reduced the time required for anesthesia by only a few minutes. Similar results were obtained with 2 per cent Pontocaine HCl and 2 per cent Xylocaine HCl solutions. The above results show that stripping the skin 15 times, thus removing approximately one-half to two-thirds of the outer stratum corneum, also removes the main barrier to penetration of the anesthetics used. The remaining stratum corneum,

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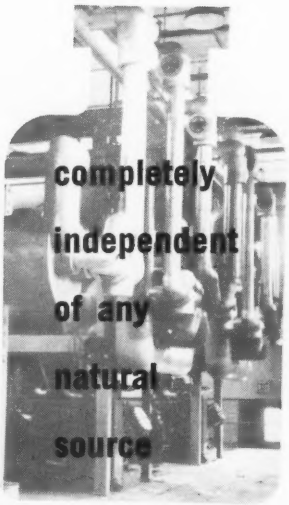

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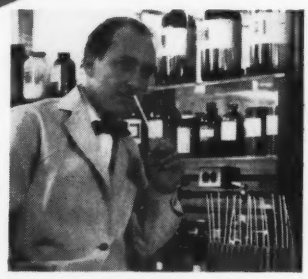

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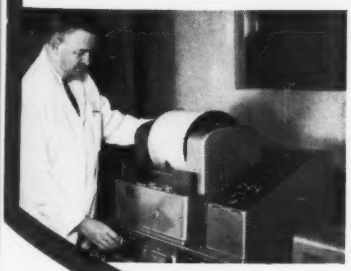

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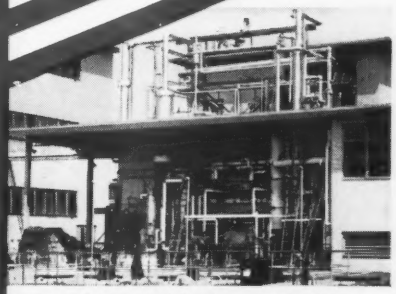

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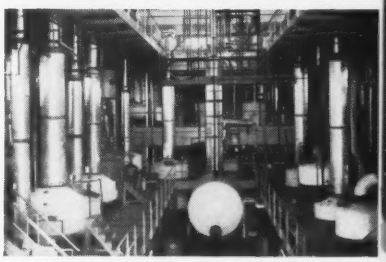

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which includes the barrier isolated by Szakall, offers very little resistance to the passage of the anesthetic solutions. The experiments with histamine phosphate solution similarly show that 10 strippings of stratum corneum have removed the principal barrier to histamine penetration.

The barrier to anesthetic solutions on the palms and soles obviously differs from that elsewhere because of the very thick stratum corneum. It requires about 600 strippings with Scotch tape to remove the stratum corneum to the point where it becomes easily penetrable to anesthetic salts or bases. The amount of stratum corneum removed to accomplish this constitutes about 98 per cent or more of its thickness. On the soles and palms, therefore, the barrier is much thicker than elsewhere and also consists of practically the entire thickness of the stratum corneum.

Prantal Antiperspirant

Prantal (brand of diphemanil methylsulfate) in a talcum powder vehicle for topical application to the skin, according to V. R. Hirschmann and F. H. Urban (*U. S. Armed Forces Med. J.* 9:177, 1958), has proved to be of value in a tropical area in controlling sweating in a significant number of dermatologic cases in which the sweating component was a significant factor or the major factor in producing symptoms. A 5 per cent concentration proved to be distinctly more effective than a 2 per cent concentration.

Prantal is an effective oral drug for counteracting hyperhidrosis, according to N. Orentreich and C. R. Rein (*A. M. A. Arch. Dermatol.* 76:762, 1957).

Failures are few, if adequate and regular dosage schedules are maintained and if individual variations are considered. The average single therapeutically effective dose for this purpose is 200 mg., and its action lasts approximately four hours.

Untoward reactions are minimal. The commonest side-effect with diphemanil methylsulfate was xerostomia, which occurred in 41 per cent of the total number of patients tested. In comparison, methantheline (Banthine) produced xerostomia in 75 per cent. Other side-effects such as bitter taste, tingling of the tongue, "gas" in the stomach, nausea, and "dry nose" were noted occasionally.

Topical Anesthesia

The purpose of this study by S. Monash (*A. M. A. Arch. Derm.* 76:752, 1957) was to attempt to produce anesthesia of the unbroken skin by topical application of anesthetic salts or their bases. Certain volatile substances, such as menthol, phenol, or benzyl alcohol, readily penetrate unbroken skin and are not a part of this report. Anesthesia following topical application of anesthetic salts is easily produced when applied to the oral, nasal, or conjunctival mucosa. Similar anesthesia of the unbroken skin is more difficult because of the skin barrier to epicutaneous penetration.

Topical anesthesia of the unbroken skin was produced in from 45 minutes to one hour by application of 2 per cent anesthetic base solutions in an alcoholic solvent under an occlusive dressing.

Similar anesthesia in one and one-half hours can be produced with 5 per cent anesthetic bases in hydrophilic ointment or petrolatum. Onset is usually more rapid in hydrophilic ointment.

Both the alcoholic solution and the ointments produce a prolonged anesthesia, lasting on the average from two to four hours.

Partial anesthesia after four hours was produced with 5 per cent anesthetic salts in hydrophilic ointment or petrolatum. With 2 per cent anesthetic salts in aqueous solution, anesthesia was produced by the well method of continuous contact in two to two and one-fourth hours.

Anesthesia of the palmar surface was produced with 25 per cent benoxinate (Dorsacaine) base in an alcoholic solvent after a four-hour application.

Sunlight and Skin Cancer

Most of the experimental evidence that ultraviolet radiation causes cancer has come from studies using artificial sunlight, but natural sunlight in the so-called tanning range also has been employed experimentally. Blum, in a recent article, attributed to Angel Roffo (1933) the induction of cancer in rats by exposing them to natural sunlight.

It has not been proved that fluorescent light is carcinogenic, but experiments have shown that it alters the susceptibility of the skin to later ultraviolet reactions.

The artificial ultraviolet light used in the experimental studies of skin cancer produces rays in the range between 2,537 and 3400 A. There is considerable controversy as to how these rays exert their carcinogenic effects. Undoubtedly they affect the cells directly, but there is also ample evidence that they produce some chemical change indirectly, probably in the nucleus, and this chemical substance may be the carcinogenic agent.

Dr. Leonard Freeman, formerly a professor of surgery at the University of Colorado Medical School, stated that he thought skin cancer is more common on the face, particularly the nose, because of a higher level of tissue cholesterol in these sites. Scientific proof of this has not appeared in the literature.

In discussing the indirect effect of ultraviolet radiation, some authorities point to nucleic acid as the villain. Kelner and Taft stated: "A working hypothesis for ultraviolet carcinogenesis is thus: the first step in the change from a normal to a tumor cell is some alteration in the nucleic acid in the cell nucleus."

From the experimental and clinical evidence it seems reasonable according to O. S. Philpott (*Postgrad. Med.* 23:119, 1958) to state that sunlight is a potent factor in producing human skin cancer. It also seems reasonable that people should enjoy the outdoors. If they are sensitive to light, adequate protection is available. Premalignant lesions should be removed properly; and skin cancers too can be treated so successfully that man need not live his life in the gloom of perpetual shade.

Bephan Spacetabs (Sandoz) are sustained action antacid-anticholinergic tablets containg 0.5 mg. of Bellafoline, 450 mg. of aluminum hydroxide-glycine and 60 mg. of magnesium oxide. The preparation is supplied in bottles of 100.

Liquemar (Organon) contains in each tablet 3 mg. of phenprocoumon, and oral anticoagulant and is available in bottles of 100 and 1000 tablets.

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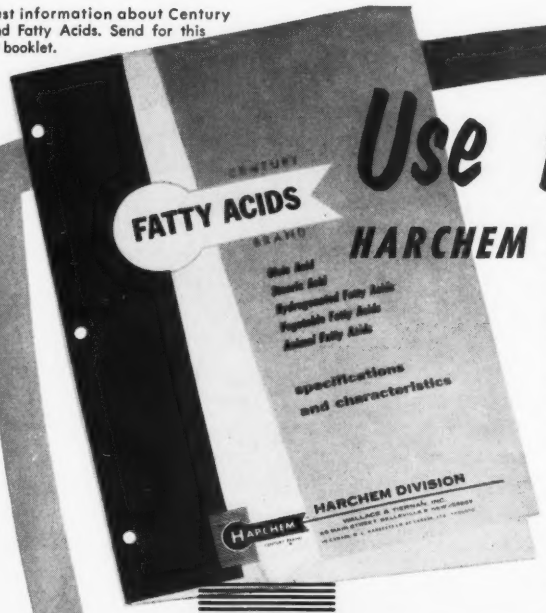

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Trade Literature

Dow Research Chemicals

Research Chemicals from Dow, a new 40-page booklet, lists some 160 chemicals available in sample lots from The Dow Chemical Company, Technical Service and Development, Midland, Michigan. A substantial portion of the chemicals listed are being offered for the first time. Chemicals described are inorganics, saturated and unsaturated aliphatics, aromatics, and heterocyclics.

Methyl Acetoacetate

Aceto Chemical Co., 40-40 Lawrence Street, Flushing 54, N. Y., has available a data sheet on methyl acetoacetate, a relatively new solvent used in organic synthesis which offers advantages over the ethyl ester.

Describing Waxes

International Wax Refining Company, East Hawthorne Avenue and L.I.R.R., Valley Stream, N. Y., has issued a brochure (7th edition, 1958-59) giving descriptions and prices of their line of waxes for industry.

F. J. Stokes Equipment

F. J. Stokes Corporation, 5500 Tabor Road, Philadelphia 20, has available a comprehensive 20-page brochure on Freeze-Drying in Industry. The new brochure, Catalog No. 735, is a compendium of the priuciples, methods, and benefits of the freeze-drying process. Many typical processing problems solved by freeze-drying are described in detail.

Stokes Bulletin No. 680 describes Stokes drum dryers and flakers which are widely used in many different industries for drying and solidifying materials from the liquid or molten state at atmospheric pressure.

Stokes Model 238 series of vacuum shelf dryers for safe, rapid drying of heat-sensitive, air-sensitive, or pyrophoric materials such as titanium, zirconium, etc., as well as materials that must be dried without agitation, is described in a new bulletin, No. 630.

Properties of 37 Waxes

A chart giving the physical properties of some 37 natural and synthetic waxes is available from The Baker Castor Oil Company, 40 Avenue A, Bayonne, N. J. Included in the data are melting and congealing points, densities at various temperatures, penetration values, and viscosities of the molten waxes.

Pyrex Glassware

A 350-page color-coded Pyrex laboratory glassware catalog, containing the most complete listing of borosilicate glass chemical ware and apparatus ever printed, has been issued by Corning Glass Works, Corning, N. Y. Some 474 new items are among the more than 9,000 described.

Day Ro-Ball Sifters

A new 8-page bulletin, No. 957, describes the complete line of J. H. Day Co., 4932 Beech Street, Cincinnati 12, Ohio, "Ro-Ball" sifters and gyrating screens. Construction details, including super-active ball cleaning device, are fully described and illustrated. A total of 18 different models are covered.

(*Continued from page 367*)

flower. A number of common aromatic chemicals such as heliotropine, benzyl acetate, rhodinol and anisic aldehyde are described as "flowery". This flowery effect is also obtainable from such materials as civet, indole and skatole, The floweriness of these aromatic chemicals is observable only when they are smelled in highly diluted form.

Fragrance—A word used in this text as an all-embracing term to describe any pleasant odor. Its use and meaning are almost synonymous with perfume. However, the perfumer's "extract" is what the layman thinks of as "perfume". Therefore, to avoid confusing the learner, "fragrance" is used consistently throughout this text.

Fragrance oil—A composition of various aromatic materials (natural or synthetic) that creates a definite fragrance effect. The components may be liquids, resins or solids, but the completed fragrance oil is always a liquid. Solvents are incorporated when necessary to produce this desired state. A fragrance oil may be diluted with alcohol to produce an extract or a cologne, or may be incorporated in a cosmetic preparation, a powder base, soap, lotion, brilliantine etc.

Fresh—An effect introduced into a fragrance by the use of a citrus oil (bergamot, lemon, orange, mandarin or lime) named in order of their utility) or certain aldehydes, notably C-9 and C-10. Other materials imparting a degree of freshness are lavender, linalyl acetate, bornyl acetate and peppermint oil.

Fruity—A quality thought of in connection with the essential oils of lemon, orange, lime, mandarin and bergamot used in perfumery. Among the aromatic chemicals, phenylethyl isobutyrate with its pineapple quality and aldehyde C-14 (peach lactone) with its clear peach note are examples. Aldehyde C-14 is used quite generally in fancy fragrances to contribute a mellow warmth in conjunction with fruitiness.

Green—A note reminiscent of fresh cut leaves or vines. Among the essential oils violet leaf absolute is an outstanding example of this "green" note. The aromatic chemical methyl heptine carbonate is a synthetic counterpart of this same violet leaf effect. The dimethyl acetal of phenylacetaldehyde with its distinct shade of mignonette is another variation of greenness.

Harsh—A word descriptive of a crude, often pungent odor. Methyl phenyl carbinyl acetate with its typically harsh gardenia note is a prime example of this odor.

Heady—Exhilarating, sparkling, stimulating. This quality would be comparable to the exciting taste and effervescence of a glass of champagne. "Headiness" in a fragrance is much sought after by the creative perfumer, but it is difficult to achieve be-

(*Continued on page 385*)

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Reader's Questions . . .

Pharmaceutical Dosage Forms: *Concerning the problem of flavoring liquid and solid oral dosage forms of pharmaceuticals, much has been written about the use of flavors, but little about changing physical form to minimize unpleasant tastes. Can you offer suggestions in a broad outline to alter the active ingredient so that taste will no longer be a major problem?* NEWARK.

Starting with the standard compressed tablet, if this is swallowed with ample water, there is usually little in the way of a flavoring problem. Nevertheless, there are some drugs, and I include aspirin among them, which have a strong residual taste which should be altered or covered. A small amount of sweetening and flavor would be advantageous. The next step, where cost permits, is coating the active tablet core, so that only the sweetened (and flavored) coating can be tasted. This same effect can be obtained, by applying the coating by means of the current press-coating techniques. Encapsulation, in soft or hard gelatin, is another means by which the taste of the medicament can be kept away from the sensitive taste buds.

The problem is very much more difficult where a liquid oral dosage form is needed. Apart from all problems of stability, the drug in solution can exhibit to the full extent all of its taste qualities, good, or for the most part, bad. Theoretically, it might be possible to convert the active chemical to a derivative that either had a more agreeable taste or was tasteless and that could be dissolved in the vehicle. This kind of research is often unproductive, since the new compound may have reduced or no activity and may not lend itself to solubilization. An insoluble derivative, however, if body chemistry reconverts it to an active compound, can make a suspension with a mild taste that can be readily covered. Soluble compounds may occasionally be suspended in oil, but taste reduction is not always satisfactory. I have had considerable success in the use of emulsions, oil-in-water and water-in-oil, with the active ingredient dissolved in the internal phase.

(*Continued from page 382*)

cause of the very limited number of materials available for this purpose. Traces of the more volatile aromatic esters such as ethyl formate and acetate can oftern initiate this effect.

Heavy—See "light and heavy".

Herby—A quality best described as a medicinal or phenolic note combined with a coarse grassiness, often pungent. The essential oils of thyme, hyssop, calamus and chamomile all illustrate the "herby" note in different ways.

Intriguing—The perfumer's equivalent of the painter's expression "eye-catching". A fragrance is said to be intriguing when it can attract and hold the attention of the individual examining it.

Leather—A sweet and pungent smokiness such as would result from the blending of methyl ionone and oil of birch tar. The best single chemical with a leather characteristic is para-tertiary butyl phenol. In spite of its odd quality, the leather (French *cuir*) effect plays an important part in the background of complex florals as a constrasting medium to break up monotony.

Lift—The conversion of a fragrance from "heavy" to "light". This is usually achieved by means of citrus oils (bergamot and lemon) and synthetics (esters of linalool, citronellol and geraniol).

Light and heavy—Words used to indicate the time and effort involved in the perception of an odor. An aromatic material is said to have a "light" odor when it is easily and quickly recognizable. Any of the essential citrus oils (bergamot and lemon in particular) are light. Among the aromatic chemicals benzyl acetate is an illustration of this quality. Lightness is usually found in materials having relatively low boiling points, or in products of ester structure.

An aromatic material is said to have a "heavy" odor when time and physical effort are required for recognition. Such a material is musk xylol; its odor is pleasant, but definite (though momentary) physical effort is required for appreciation. Materials producing "heaviness" usually have high boiling points, as for example santalyl acetate and vetyvert acetate.

An overabundance of heaviness dulls or deadens a fragrance; an overabundance of lightness thins and acidifies a fragrance.

Modern—A word used loosely to describe fragrance compositions containing aliphatic aldehydes to the extent that they are observable in the topnote. This nomenclature came about when the aliphatic aldehydes were first introduced into perfumery. Since aldehyde-based fragrances were then regarded as highly novel and daring, they were referred to as "modern", a name which has persisted.

Perfume oil—See fragrance oil. The expression "perfume oil" is used today by many people for

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traditional rather than proper descriptive reasons.

Powder—A term used to describe toilet powders of all types, including various specialties such as anti-perspirant powders, baby talcs etc. Basically a powder consists of talc (powdered, purified magnesium silicate) blended with other materials of a diluent, cosmetic or medical nature, and perfumed with a fragrance oil.

Powdery—a descriptive term applied to fragrances having a considerable sweet and musky odor. Compositions having this "powdery" note contain mixtures of vanillin, coumarin, heliotropine, musk xylol, musk ketone or musk ambrette in their design. This special effect is introduced into the background of existing fragrances to ensure their satisfactory performance in powder mediums.

Frequently "raw" (i.e.: unperfumed) powder bases with a high talc content show a "sour" note by themselves. This requires masking before a fragrance oil can properly display itself in these bases. Conventionally, either the perfume or cologne fragrance is used to perfume a powder, and is given this "powdery" adjustment in its background to be sure that the "sourness" of the powder vehicle does not "show through".

Rich—A word used in perfumery to describe fullness. A "rich" perfume is comparable to the harmonious effect of a full symphony orchestra. One of the best examples of richness in a single aromatic material is natural jasmin absolute. Although jasmin absolute is costly it is widely used because of the inimitable touch of richness it confers on any fragrance.

Rounding out—A phrase used to describe the process of adding the finishing touches in the creation of a fragrance. A perfumer would say, "Small quantities of jasmin and rose absolutes were added to round out the bouquet".

Sachet—An absorptive powder mixture blended with a given quantity of fragrance oil. This mixture is usually composed of kieselguhr, talc and magnesium carbonate. In special instances finely powdered alpha cellulose and ground silk fibres have been used. Experimental work has also been done with activated silica gel and absorptive alumina.

The fragrance oil content of a sachet may vary from 5 to 20 per cent depending upon the absorptive capacity of the base mixture.

Sharp—A "penetrating" quality found in any of the aliphatic aldehydes used in perfumery. A combination of loud, coarse, aromatic chemicals in a cheap fragrance occasionally produces a mildly penetrating effect that can be classified as sharp.

Spicy—A word descriptive of a pungent or piquant fragrance. Oil of cloves or oil of cinnamon are classic examples of spiciness in single aromatic materials. Among the aromatic chemicals eugenol and isoeugenol are illustrations. In the flower group carnation

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and oil of lavender may be described as having spicy nuances.

Sweet—A fragrance effect classically illustrated by the rose. The rose effect is constantly used to sweeten perfume oils during the course of their design. The rose is to the perfumer as sugar is to the chef.

The recently developed chemical "Palatone" is an excellent demonstration of a single chemical body with an intense sweetening effect, both in perfumery and flavors.

Thin—A fragrance lacking in the overtones necessary to give it "color" is described by the perfumer as "thin". Musically this condition might be illustrated by the sound of a single violin played without accompaniment. "Thin" and "sharp" are somewhat related in meaning.

In practical perfumery this "thin" effect is encountered in the "modern" aldehydic fragrances when the aldehydes have not been given enough floral coverage to soften their impact, and in compositions based on too few components.

Tonality—The dominant note or theme of a fragrance.

Top note—The immediate effect of a fragrance upon the sense of smell. This expression is commonly used in connection with an extract of cologne, when examined on the skin. Careful consideration of this top note is highly important in the design of a fragrance, since the initial sales appeal may be totally dependent upon its quality.

Chemically, the top note is the most volatile material in the composition of the fragrance oil, and often it is deliberately accentuated by the use of a highly volatile chemical, as for example in the French practice of using a trace of methyl acetate or propionic aldehyde, to emphasize the first "fruity" effect of a cologne top note.

Warm—A word used to describe a fragrance which has a stimulating effect upon the imagination. The effect of warmth is usually conferred by materials having an unconventional odor. Such a material would be octyl isobutyrate whose odor lies on the borderline between flavors and perfumery.

Woody—a fragrance effect generally linked with the aroma of freshly cut, dry oriental wood or fibrous root, as illustrated respectively by the essential oil of sandalwood or vetyvert. "Woody", is a term having an entirely different meaning to the layman than it does to the perfumer, must not be confused with "woodsy" which implies the green effect of a forest.

LATIN-AMERICAN DRUG LAWS

(*Continued from page 309*)

fluence of the supermarket may account for the fact that the same law prohibited the sale in pharmacies of any products other than medicines, chem-

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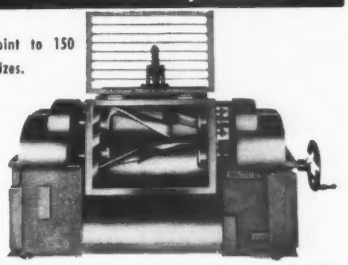
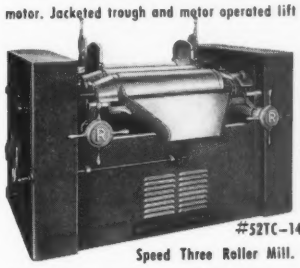


#41L–10 Gal. Double Arm Kneader with two speed brake motor. Jacketed trough and motor operated lift optional.



• 4½ x 10, 6 x 14, 9 x 24, 12 x 30, 14 x 32, 16 x 40" sizes.

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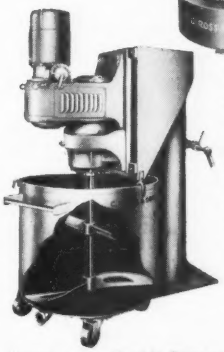

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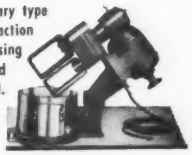

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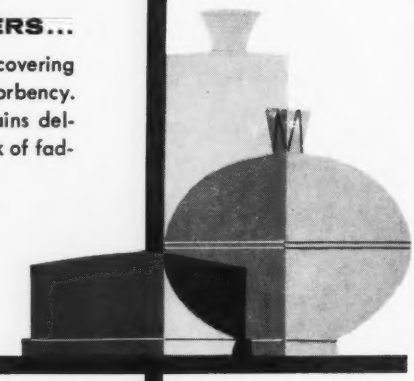

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Even today the law of El Salvador literally seems to reserve to pharmacists the exclusive right to manufacture and sell medicinal products.[4] The Junta de Ouimica y Farmacia in that country has in recent years reasonably interpreted this so as to permit companies to manufacture and sell medicinals, but a pharmacist must be president or manager of the company, as well as a stockholder. The law of France still contains an even more restrictive provision. However, in 1955 this was amended to provide that the principal classes of companies having a registered capital of fifty million francs or more are exempt from these provisions.[5] It is obvious that while laws of this type served their purpose in the days when the compounding of medicinals was actually done by an individual pharmacist, they have outlived their usefulness in this era when automation determines the amount of baking soda to be mixed with the salicylic acid.

My principal point in referring to this bit of history is to indicate that the civil law countries were probably the leaders in the development of laws to control the manufacture and sale of medicinals. Comprehensive codes existed in those countries at a time when our own legislation was actually in a primitive state.

Another lesson that may be learned from history is the fact that many of these codes which were adopted by then advanced countries became obsolete. The history of the law is filled with examples of legal complacency which arises out of the existence of codes. Few of the pharmaceutical codes in Latin America can be criticized on this score. In general they are flexible and give wide discretion to administrative agencies. This can be disconcerting to lawyers trained in the common law, but does not upset those who are used to the repeal of legislative decrees by ministerial regulations, and their subsequent resurrection by administrative circulars. In any compilation of a uniform code of drug laws which could be adopted by the civil law countries, careful attention should be given to the problem of flexibility to meet changing conditions, which the future will inevitably bring.

As most of you know, in the field of food law substantial progress has been made in the compilation of a uniform code. A commission, under the chairmanship of Dr. Carlos A. Grau of Buenos Aires, has completed the first eleven chapters of the draft of a model alimentary code which will be presented to the Latin American Congress of Chemistry scheduled to meet in Mexico City in 1959. It is my understanding that the Food Law Institute will undertake the publication of this code in both English and Spanish. To my knowledge no similar work has been done in the field of drug law. However, at its Tenth Conference

in Buenos Aires the Inter-American Bar Association created a Section on Food, Drug and Cosmetic Laws of the Americas.[6] I believe the new Section will concentrate for the present on a study of the drug laws of this Hemisphere, and it is to be hoped that this work will contribute to the adoption of sound laws by the Americas.

We will have difficulty reconciling the common and civil law because of the fundamental differences in the two systems. It is difficult for me to imagine the United States adopting the affirmative licensing system prevailing in Latin America or the civil law countries adopting our system. If we are going to advocate "a standard law" in this Hemisphere, whose standard are we going to use?

At this point you may think that I am unduly pessimistic. On the other hand, I may be like the optimist who enjoys the view when he has been treed by a bull. The drug laws of the Hemisphere look fairly good from where I sit; a surprising amount of uniformity already exists and more will be attained if we approach the problem step by step, for "paso a paso se va lejos".

1. **World Trade Information Service, Part 2, Operations Reports,** "Pharmaceutical Regulations of————", published by the Department of Commerce (covering 13 countries to date). See also the following earlier Department of Commerce publications: **Business Information Service,** "Panama—Pharmaceutical Regulations", January 1954; **World Trade in Commodities,** "Pharmaceutical Regulations of the Dominican Republic", June 1950, "Guatemala: Regulations Governing Medicinal and Biological Products, and Toilet Preparations", December 1947, "Peru—Pharmaceutical Regulations", April 1948; **Industrial Reference Service,** "Pharmaceuticals, Proprietary Medicines, Biologicals and Medicinal Chemicals—Republic of Haiti", December 1945, "Nicaragua—Pharmaceutical Regulations", August 1945, "Paraguay—Regulations Governing Pharmaceuticals and Toilet Preparations", May 1945.
2. See, for example, Argentina, Art. 79 of Decreto de 18 Septiembre 1906: Reglamentacion de la ley sobre ejercicio de la Farmacia, as amended by Decreto No. 29.112 of 12 Octubre 1947; Brazil, Decreto N. 20.397 de 14 Janeiro 1946; Regulamento de Exercicio da Industria Farmaceutica no Brasil, Art. 63; Dominican Republic, Arts. 5 and 9 of Reglamento No. 1951, 6 Agosto 1956: Reglamento para la fabricacion y registro de productos medicinales, veterinarios, biologicos, quimicos, farmaceuticos, especialidades farmaceuticas y drogas narcoticas, issued under the Codigo Trujillo de Salud Publica (Ley No. 4471); Mexico, Codigo Sanitario de los Estados Mexicanos, 10 Marzo 1955, Art. 206, and Reglamento para el registro, revision, certificacion y propaganda de medicinas de patente, especialidades, aparatos medicos, productos de tocador, higienicos, de belleza y similares, 20 Mayo 1942, Arts. 16 and 36; Venezuela, Decreto No. 53, 15 Marzo 1943: Reglamento de la Ley de Ejercicio de la Farmacia, Art. 53.
3. Escriche, Joaquin, **Diccionario Razonado de Legislacion y Jurisprudencia,** Madrid, 1874, Vol. 2, pp. 120 and 121.
4. Ley de Farmacias, Art. 19.
5. Art. 596 of the Code de la Sante Publique, as amended by Law of 22 May 1955.
6. The following were appointed the first officers of the Section: Chairman, Dr. Jorge E. O'Farrell, Buenos Aires, Argentina; Vice Chairmen, Charles Wesley Dunn, New York, U.S.A., Victor C. Folsom, New York, U.S.A., Dr. Noe Azevedo, Sao Paulo, Brazil; Secretary, Dr. Enrique E. Bledel, Buenos Aires, Argentina.

GERANIUM BOURBON

(Continued from page 311)

a higher price for his lot. But if the oil is properly stored during that period, it will not suffer. Unproperly stored geranium oil may assume the characteristic odor of an "old" essential oil, become resinified, terpeny, harsh, and increase in viscosity. In the physico-chemical constants, considerable change takes place: Esters are split, acids increase etc., and such changes are, of course, not wanted, nor intended from the speculating oil-broker's side. Furthermore, such second-grade oils will never obtain an export certificate from the Government laboratory in Saint-

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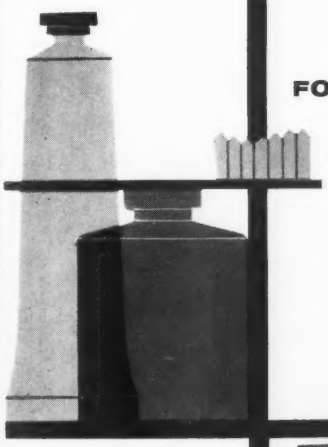

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Denis, and, accordingly, they will be unable to leave Reunion.

Direct falsification of geranium oil in Reunion itself is a very rare thing, and I cannot think of any other means of "cutting" than alcohol, which is readily available from the rum distilleries. In an earlier European publication, I drew the attention to the peculiar fact, that rum fractions and geranium oil have a considerable number of constituents in common. I emphasized, that this must be a coincidence, and that the middlemen in Reunion probably are completely unaware of this fact. Collegues found these remarks funny. But I would like to renew my opinion that certain fractions of rum, commercially known under the name fusel oil, chemically and odor-wise have a certain similarity to Bourbon geranium oil. The chemical side is a fact. Odor can be discussed. So, here is another good and sound laughter for fellow perfumers!

No synthetic aromatic chemicals are available, and the only chemists in Reunion are those who are occupied with government control of export lots of agricultural products, and also a few chemists employed by the largest exporters, of whose repute there is only the very best to say. The island is very small, so that every movement in the business is known by everyone within a surprisingly short time.

The fields I visited had been cut by hand some 6 or 8 weeks earlier, i.e. in the middle of October. In the cutting, at least one branch of the plant is left, thus enabling it rather quickly to produce more foliage, and further to take up its CO_2-nourishment from the atmosphere. The geranium plants now already appeared strong and fine, with new branches and a beautiful foliage developing. For my personal satisfaction, I took some leaves, pressed and dried them, and when I later compared them with the leaves that I had collected in Belgian Congo and Algeria, I was able to see the difference in their morphological structure. As it is comprehensively described in Guenther's: "The Essential Oils, vol. IV, pages 671-675, the geranium plant has a pronounced tendency of developing into hybrids, and there are hardly two countries who produce exactly the same variety of geranium. When, furthermore, the method of distillation, the equipment, the methods of harvesting and collecting varies from one country to the other, it is no wonder that we have so many different qualities of geranium oils, and that no one resembles the Bourbon oil.

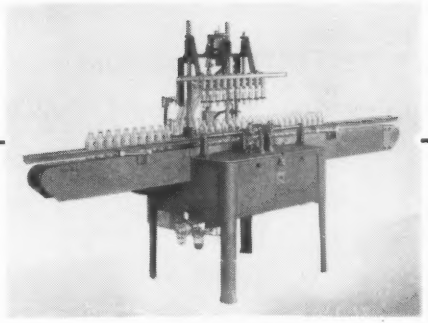
It was just before Springtime in Reunion (December), and I could get some specimens and photographs of the flowering geranium plants. There are two harvests yearly, but flowers only appear once. When the weather permits so, geranium plants can be cut for distillation throughout the year, i.e. like most other plants or leaves for distillation: after a

certain spell of dry weather. Prolonged wet weather makes harvesting and particularly distillation and yield poor. One heavy disadvantage in Reunion is the cyclone hazard. Every year, during the first months, the people are on guard and listen carefully to the weather reports. Cyclones will be reported in due time, but no one can exactly point out, where the cyclone will strike. The loss of human lives and to a certain degree the material losses can be diminished by the fact, that the inhabitants are prepared hours, or even a day or two in advance. But when finally a cyclone strikes,—and they certainly have struck several times during the past 10 years in Reunion,—nothing can stop it. Even the rare soil is simply wiped off the hillsides, and the floods of torrential rains following the cyclone will flush off the little that is left. That trees and houses are turned over, one can imagine, but that the 10 or 15-inch plants as geraniums are stripped of their foliage and torn away, is almost incredible, but none less true. After the cyclone on the 25th January, 1948, the annual output of geranium oil fell from 100 tons to 4 tons. This may give you an idea of the effect a cyclone can have upon the entire economic situation of the island. Reunion was completely cut off from the outside world for several days after the cyclone.

Sugar cane is the most cyclone-resistant plant, and that is one more reason, why sugar cane is a "privileged" culture. The scarce, flat lowlands are almost reserved for it, roads are built for the transportation of sugar cane, 15 large, modern processing plants swallow up the bulk of available labor during the rush season. Those are some of the reasons, why geranium Bourbon is subject to heavy price fluctuations. "Blame the cat", states an old proverb, when something goes wrong, or some accident happens, and no one wants to accept responsibility. Reunion people tend to use the cyclones as an excuse for price changes (mostly increases!) a little more frequently, perhaps, than is climatically correct. They may put the blame on cyclones, just as European farmers will blame the "lack of rain", the "frost" or some other "force majeure" for a decrease in crop, followed by an increase in price.

My further excursions went beyond the center of the island to the Vanilla district in the Southeast. The main geranium district was easily accessible by car, and gave me a good opportunity of seeing the "Plaine des Cafres". The name refers to the early "imported" African slaves from the Kaffer tribe in Zululand. Although slavery was discontinued in 1848, it was not until 1870, that a constitution secured "equal rights" for all inhabitants. The level of living does not seem to have improved for the Kaffers.

Back in Saint-Pierre on the South Coast, I had an



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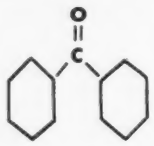

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interesting talk with the chemist in charge of incoming lots at the local Barbot-godown. Here, too, I could collect authentic samples of Bourbon geranium oil, and thus complete my collection from the fields. It is generally known that particularly a fresh geranium Bourbon presents quite surprising topnotes, which do not at all occur rosy or "pelargonium-like" to the layman. Probably because of the method of distillation, Bourbon geranium oil contains more low-boiling decomposition products from leaf material than do other geranium oils. If distillation of harvested leaf material is not carried out within 12 hours, considerable amounts of decomposed plant chemicals may occur in the oil. Some distillers deliberately keep the plant material in open storage 12 or 24 hours before distilling it. Obviously a considerable loss of essential oil results, and this is hardly compensated for by the increased amount of plant material which can be placed in the still. Sulfides and low-boiling aldehydes are common in essential oils distilled from leaf material but these will usually evaporate on aerating. These "unpleasant" notes are generally characterized as "still" notes. The quite abnormal system of using the same water for condensation and steam-production again and again, and the fact that the field distillers often leave the water in the bottom of the still for the next charge, may also play a great part in the formation of such objectionable by-odors. But, after proper aging and/or aeration, Bourbon geranium oil presents its full beauty, the reason for which is still not quite solved. Although the "rhodinol" content is of minor importance, the proportion geraniol/citronellol and the formate content are among the main points of variation in the different geranium oils, Ketone content varies considerably, but we are inclined to believe that in the "geranium case" too, the answer will be found in surprisingly small quantities of "key" materials.

For reasons outlined in the above, there should be no risk for the Reunion producers in carrying on their production, and being able to maintain the present price level. But every time a period of shortage or price increase occur, the big consumers invariably enhance their attempts to find suitable replacements for this valuable perfume raw material. Geranium oil is one of the essential oils which have been fairly carefully examined and analyzed, and the commonly known fact that the content of alcohols (citronellol-geraniol) has only minor influence upon the odor value of this oil, may one day develop into a serious threat and competition for the genuine, natural Bourbon geranium oil.

Until then, try to imagine, every time you use genuine Bourbon geranium oil, how many hours of work there is hidden behind every ounce of it. You may appreciate the oil even more, then!

(*Continued from page 313*)

should in general be replaced by the modern concept of hydrophile-lipophile balance.

As seen in Figure 3, an improper hydrophile-lipophile ratio, comparable to the inversion point, resulted in an unstable emulsion in the HLB range of 5.5 to 9. Similarly, in the HLB range below 4.8 the w/o emulsion was unstable because the emulsifier phase was too lipophilic, and in the range about 10.5 the o/w emulsion was unstable and broke rapidly because the emulsifier was too hydrophilic.

Finally, at the HLB values of 4.8 and 10.0 the balance of lipophilic and hydrophilic character of the emulsifier phase was proper for the formation of stable w/o and o/w mineral oil emulsions in this system.

The principle of mixed emulsifying agents. The fact that stable o/w and w/o emulsions can be prepared by combining different ratios of lipophilic and hydrophilic agents of the proper chemical type is illustrated in Figure 3. The effectiveness of such mixed emulsifying agents is borne out in this paper, and has been investigated by Schulman and Cockbain[5]. Furthermore, we have often observed that a w/o emulsion, such as the vegetable oil-lime water lotion type, is definitely improved by the addition of an o/w emulsifier (e.g., tragacanth or Tween 20) in an amount which is not sufficient to invert the emulsion. Accordingly, it appears that the best emulsion results when a mixture of natural or synthetic agents of opposite type are present at the interface, so long as they are not physically or chemically incompatible.

In order to illustrate this principle in a more graphic way, mineral oil emulsions were prepared with mixtures of Tween 80 and Arlacel C, and emulsions ranging in HLB from 3.7 to 15 were made in the same manner as previously outlined for the HLB determinations. A series of emulsions containing single and mixed emulsifiers is shown in Figure 4. The figure illustrates that a combination of emulsifying agents at the proper HLB formed better o/w emulsions than was possible with either agent alone. The emulsion prepared with Span 80 also produced a fairly good emulsion, since this emulsifier had the proper HLB needed for the formation of a w/o mineral oil emulsion.

Summary and Conclusions

The HLB values of some natural emulsifiers were determined, and the following values were obtained: acacia, 8.0; Pharmagel B, 9.8; Methocel, 15 cps, 10.5; and tragacanth, 13.2.

It was found that by using mixtures of natural and synthetic emulsifying agents in the proper hydrophile-lipophile ratios, stable oil-in-water and water-in-oil emulsions could be produced. The results indicated that the older concept of antagonism between agents of the "opposite type" should be replaced by

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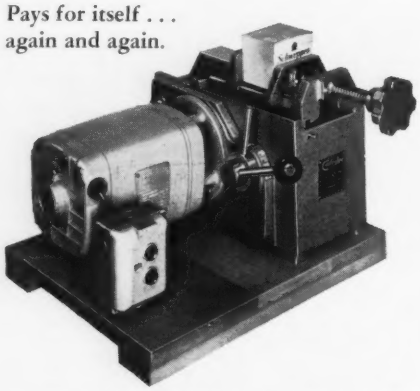

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the newer concept of hydrophile-lipophile balance. Accordingly natural emulsifying agents previously considered to be antagonistic can, in many cases, be mixed to produce more stable emulsions than is possible by the use of either agent individually.

Thus when the findings of the present investigation are combined with the "rules of thumb" employed for years in emulsion technology, and when the recently formed views concerning hydrophile-lipophile balance, chemical properties, and individual characteristics of emulsifying agents are considered. a new approach to the formation and stabilization of emulsions is possible. This approach allows explanation of why a combination of acacia and tragacanth forms better emulsion than does either agent alone, why small amounts of o/w emulsifiers may be combined with w/o agents to yield better products, why gelatin is a good stabilizer for o/w emulsions once the initial dispersion has been formed. It is possible to predict the best combination of emulsifying agents for a stable emulsion and to choose the best surfactant; it indicates that a blend of properly chosen emulsifying agents is often more desirable than a single agent for the preparation and stability of cosmetic and pharmaceutical emulsions and lotions. These generalizations may be referred to as *the principle of mixed emulsifying agents.*

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MODERN TOOTHPASTE MANUFACTURE

(Continued from page 316)

satisfactory performance of a flavor in every type of toothpaste base. It is important that each flavor be tested thoroughly for stability, viscosity, effect. color changes and fidelity to original strength and character, in the dentifrice base. Stability should be determined at 3 levels, elevated temperatures (43°C), room temperature and freezing, for specific periods of time (usually 6-9 months). Storage samples may then be compared to 7-day samples to detect variations from the standard.

G. Preservatives: Routinely used in dentifrice manufacture are the esters of p-hydroxybenzoic acid to prevent bacterial decomposition of the gum stabilizer and also the diluted humectant. Purified rather than technical grades should be used when formulating. Ethyl p-hydroxybenzoate has proved quite satisfactory at the rate of 0.1 per cent of the formula.

H. Water: Deionized water is recommended and used to minimize the possibility of flavor and color change. Despite this, one manufacturer admits

to the use of untreated (tap) water for many years without experiencing any difficulty.

PACKAGING

Toothpaste has been packaged conventionally in collapsible tubes and their proper selection is of first importance. The tubes may be made of tin, tin-lead alloys and aluminum. The aluminum tubes may be lined with wax, vinyls and special converted resins where additional protection is required. Special inhibitors have been incorporated in the formula to allow for the utilization of unlined aluminum tubes. Corrosion of the tube, and discoloration of the contents must be guarded against and can be determined by adequate storage tests.

Today, there are new developments in the packaging of toothpaste such as the use of polyethylene containers and nitrogen aerosols. These offer unusual sales possibilities and are worthy of further mention.

The desirable properties of polyethylene such as flexibility, unbreakability, resistance to corrosion and lightness are well known. From an esthetic viewpoint, it provides a very attractive container for cosmetics since it can be gaily colored and molded into many unusual shapes. This polymer is not as complete a barrier as metal or glass since certain substances may be absorbed and pass through or deform the walls of the container.

Essential and mineral oils are particularly bad offenders in this respect; flavor compounds very often permeate the tube material and adjustments in flavor concentration are necessary to compensate for losses. Loss is dependent primarily upon the carrier; for example, permeation is slower from alcoholic solutions than from water. Permeation is related to polymer thickness and it is possible to decrease this effect appreciably by increasing wall thickness.

Before the advent of special protective polyethylene linings, considerable difficulty was experienced in attempting to package certain cosmetics including toothpaste in polyethylene tubes. Observed defects included greasy film formation on the outside of the containers, collapse (even though relatively negligible in tubes), weight losses, color changes, polyethylene degradation, flavor and odor changes and bleed-through effect on printing.

In toothpaste packaging, uncoated polyethylene tubes on occasion proved unsuitable for certain formulations containing a high proportion of glycerin. Replacement of glycerine by sorbo syrup eliminated some of the packaging difficulties.

A number of substances have been useful in minimizing permeability and these comprise polymeric coatings, including polyvinylidine chloride and polyvinyl alcohol. Assuming that the problems of formulating a toothpaste base have been resolved, the incorporation of a satisfactory base in a polyethylene container requires careful testing before marketing. Particular attention should be given the following

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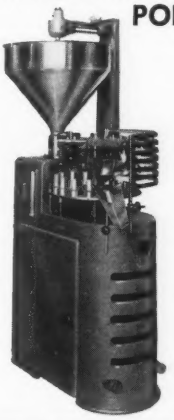

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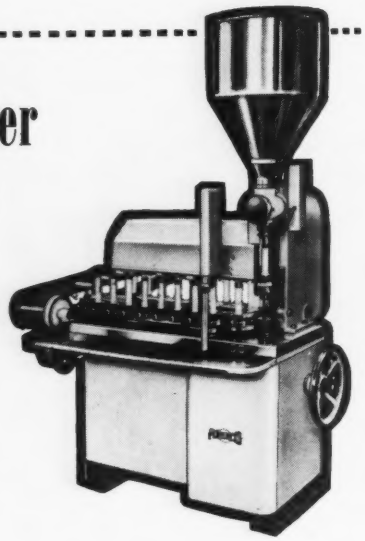

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changes during accelerated storage tests:

A. Product
   1. Weight
   2. Texture
   3. Flavor and odor
   4. Viscosity
   5. Color

B. Container
   1. Collapse
   2. Greasy surface film formation
   3. Color and printing ink stability
   4. Polymer degradation.

For laboratory testing procedure the technic and methods utilized by the Wright Air Development Center of the Air Force Air Research and Development Command at Wright-Patterson Air Force Base, Ohio, provide a good starting point. This is covered in WADC Technical Report No. 53-133. The method comprises the weighing of empty tubes (or containers) which are then sealed tightly after filling and reweighed. Tubes are stored at room temperature, 105°F and 32°F. Weighings are made after 3, 5, 7, 14, 21 and 28 days. Percentage weight losses of contents at each weighing are reported and plotted. The curve is extrapolated from a straight portion of the curve (showing that equilibrium has been reached) to a 365 day value. It is generally agreed that 3 per cent is considered a maximum allowable loss for unlined containers. Glass jars may be used as controls.

For testing the resistance of printing inks, it has been suggested that the imprinted container be immersed in the product for a predetermined period, wiped clean and evaluated.

A novel and unquestionably useful development is the pressurized nitrogen pack which is currently being thoroughly investigated for dentifrice packaging. All major dentifrice producers already have packages in test market or under investigation. The container with nitrogen gas as the propellant (rather than the conventional hydrocarbons and their halogen derivatives) will not produce foams or sprays but will conveniently deliver the product in its original form as a cream or paste. Pressing a button dispenses the dentifrice directly to the toothbrush.

Nitrogen gas pressure pushes the product up and out through a tube whose lower end is immersed in the paste. The important difference between this and liquefied gas aerosols is that nitrogen is inert and is not soluble in the dentifrice.

Each type of dentifrice will represent a new problem in balance of headspace, dip tube diameter and valve openings. Stability of flavors and base may increase considerably in the presence of an inert gas.

A dentifrice formulation for the nitrogen pressure package must flow more readily than the collapsible tube product. To attain the correct characeristics, changes should be made in the proportion of abrasive and the thickener.

The new "Stripe" dentifrice is an ingenious innovation, requiring no change in formulation, however. Within the neck of the collapsible tube is a plastic cylinder surrounded by the small amount of colored paste. Pressure on the tube extrudes white toothpaste which is given a spiral motion by rifling grooves inside the plastic. Simultaneously, the red paste is extruded through very small holes at the top of the plastic in such a way as to be in contact with the white paste.

As stated earlier, there are many factors which contribute to the success or failure of a dentifrice. For example, a perfectly sound formula may prove quite unsuitable when worked with a different flavor. The body, stability and flavor effect may be altered, sometimes considerably. Toothpaste is one product where quality control from development to manufacture is essential for continued success.

General starting formulas would comprise the following:

Formula No. 1

Dicalcium phosphate (dental grade)	50.0
Glycerine	30.0
Gum stabilizer	1.0
Foaming agent	0.5 to 2.0
Water	16.0
Flavor, sweetener and preservative	Q.S.

Formula No. 2

Dicalcium phosphate (dental grade)	40.0
Glycerine	15.0
Sorbo syrup	15.0
Calcium carbonate	9.0
Trimagnesium phosphate	1.0
Foaming agent	2.0
Water	16.0
Gum stabilizer	0.5 to 2.0
Flavor, sweetener and preservative	Q.S.

The manufacturing procedure, briefly, entails the incorporation of the binder with the humectant, preservative and sweetening agent. The abrasive and foaming agent are then added together with the flavor and the entire mass rendered homogeneous by a mixing-milling-deaeration process. Either a hot process or cold process is employed and this is dependent upon the type of stabilizer utilized. Equipment is designed to minimize metal contamination which may induce discoloration or flavor changes.

Quality and Performance Checklist

A. Storage tests	Arbitrary scale Good	Fair	Poor
1. Flavor stability	☐	☐	☐
2. Color stability	☐	☐	☐
3. Body (viscosity)	☐	☐	☐
4. Texture	☐	☐	☐

(Continued on next page)

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B. Performance tests	Arbitrary scale		
	Good	Fair	Poor
1. Brush and mouth rinsability	☐	☐	☐
2. Gloss	☐	☐	☐
3. Foaming action	☐	☐	☐
4. Flavor development	☐	☐	☐
5. Flavor fidelity	☐	☐	☐
6. After taste	☐	☐	☐
7. Sweetness level	☐	☐	☐
8. Ease of extrusion	☐	☐	☐
9. Shape retention after extrusion	☐	☐	☐
10. Polishing action	☐	☐	☐

It is suggested that the dentifrice be stored at 43°C for 6 to 9 months and at freezing for 2 weeks to 1 month before reaching any conclusions about quality and stability. The suggested quality and performance checklist should prove helpful in developing a commercially acceptable dentifrice.

TAXABLE AND NONTAXABLE COSMETICS

(Continued from page 337)

use in care of babies only).

Essences and extracts, perfume.
Eyebrow pencils.
Eyelash mascara and eyelash and brow dyes.
Eye shadows.

Face creams.
Face lotions, facial oils.
Face packs.
Face powders, in loose or cake form.
Fingerwave lotions.
Floral essences.
Foundation makeup film.
Freckle removers.
Fuller's earth (if recommended for toilet purposes).

Glycerine and rose water.

Hair bleaches.
Hair dressings.
Hair dyes.
Hair lotions.
Hair oils.
Hair pomades (regardless of whether they are colored or scented).
Hair removers (except those of the abrasive or mechanical type).
Hair restoratives.
Hair sprays.
Hair straighteners.
Hair tints and rinses.
Hair tonics.
Hand creams.
Hand lotions.

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Leg makeup.
Lip ices and salves (if colored or perfumed or if recommended for the prevention of chapped lips or for other toilet purposes).
Lip pomade.
Lipsticks, lipstick refills.
Liquid face powder.
Liquid lip color.
Liquid stockings.

Manicure preparations.
Mascara.
Massage creams.
Mittens containing toilet powder.
Mustache wax.

Nail bleaches.
Nail enamels.
Nail enamel or polish removers.
Nail lacquers.
Nail polishes, paste, powder or liquid.
Nail whitener.

Olive oil (colored, or perfumed, or recommended for toilet purposes).
Orange flower water.
Oris root.

Perfumes.
Perfume ingredient kits (tax applicable to that portion of retail selling price which is allocable to the perfumery ingredients. Test tubes, droppers, etc., not taxable).
Perfume novelties, containing perfume.
Permanent waving creams, lotions, neutralizer.
Permanent waving kits (curlers, soap, nontaxable shampoos, caps, etc., in kits may be excluded in the computation of the excise tax if retailers records show comparative values of taxable and nontaxable articles in kit, based upon separate retail prices, or upon cost, if they are not actually sold separately).
Peroxide (regardless of its strength, if recommended for use in bleaching the hair or for other toilet purposes).
Petroleum jelly (if scent or color added).
Plucking creams (for use in connection with plucking hair).
Pore cleansers (other than soap).
Powder bases (liquid and cream).
Protective creams (having toilet claims or used as skin creams or antiperspirants).

Rock salt bath crystals.
Rose water
Rouges.

Sachets containing powder or aroma producing materials. When cases, for home storage of lingerie,

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Scalp lotions, scalp ointments, which are used or intended for use as a treatment for dry, oily or falling hair.

Shampoos (containing 5 per cent or less of saponaceous matter, regardless of advertising claims or other ingredients).

Shampoos (if recommended in advertising for conditioning, waving, straightening, bleaching, dyeing, tinting, or otherwise changing the natural appearance of the hair regardless of the saponaceous matter in the product).

Shaving preparations which, in addition to use in softening the beard preparatory to shaving, are recommended for use as a skin conditioner, as an after shave lotion, or for any other toilet purposes.

Skin balms, bleaches, creams, fresheners, lotions, oils, tonics, whiteners.

Stain removers, for use in removing stains from the hands or other parts of the body, unless the product contains more than 5 per cent saponaceous matter.

Styptics (if recommended for use as anti-perspirants or for other toilet purposes).

Sun allergy cream (if recommended for use before exposure to sun to prevent sunburn).

Sunburn preventatives—Suntan creams, lotions, oils, etc.

Talcum powder (unless advertised or labeled for use in care of babies only).

Texture creams.

Tissue creams.

Toilet ammonia.

Toilet creams.

Toilet lanolin.

Toilet waters.

Vanishing creams.

Water softeners (perfumed or having toilet claims).

Wave set (paste, powder or lotion).

Witch hazel (regardless of purpose for which recommended).

Wrinkle concealing preparations.

NONTAXABLE

Acne creams or lotions (if not recommended for toilet purposes).

Anointing oils (if advertised and labeled for use in care of babies only).

Antiseptics (if not recommended for toilet purposes).

Baby oils, powders, creams, lotions (if advertised and labeled for use in care of babies only).

Brushless shaving cream (if not recommended for use after shaving).

Chlorophyll, in lozenge, tablet, or liquid form, to be taken internally.

Corn or callous removers.

Dandruff preparations or products used or intended for use as a remedy for, or as an application for relief from, dandruff (including the incidental elimination of dandruff scales or flakes), provided the labels, leaflets or other advertising relating thereto are so limited as to exclude any reference to the use of the preparations or products for toilet purposes (such as to improve one's personal appearance). Scalp lotions and scalp ointments, however, which are used or intended for use as a treatment for dry, oily or falling hair are taxable.

Dentifrices.

Deordorants (for use only for spraying rooms, bedding, or inside of automobiles).

Electric shaving preparations which serve the same functional purposes as lather or brushless shaving creams, provided they are not recommended for use after shaving or for other toilet purposes.

Emery boards.

Eye drops, eye lotions and eye washes (if not recommended for beautification of the eyes).

Eyelash brushes.

Eyelash combs.

Eyelash curlers.

Facial tissues.

Foot creams, balms, lotions, and powders for use in the treatment of tired, aching, burning or itching feet, or of skin irritations such as "athlete's foot," provided no claims or recommendations are made in advertising matter for use as deodorants, antiperspirants, or for other toilet purposes.

Glycerine (if not recommended for toilet purposes).

Lip ices and salves (uncolored and unperfumed and recommended for use only after exposure).

Manicuring instruments.

Medicated preparations (if recommended only for relief of skin irritations and not for prevention of sunburn, chafing, etc.

Mosquito repellents (unless advertised as sunburn preventatives).

Mouth washes (if not recommended for after shaving use or to sweeten the breath or other toilet purposes).

Permanent waving curlers, caps, tissues.

Peroxide (if recommended only for use as an antiseptic or for medicinal purposes).

Powder puffs.

Preparations compounded by druggists pursuant to bona fide prescriptions of physicians (except where the prescription, on its face, specifies that it is for toilet purposes).

Preparations when recommended exclusively for use by morticians in preparing bodies for burial.

Reducing salts (unless perfumed or recommended for toilet purposes).
Rose jars (if intended for use solely in scenting or perfuming the air of a room or home).
Rubbing alcohol (if not scented or recommended for toilet purposes).

Shampoos (containing more than 5 per cent of saponaceous matter and which are recommended only for cleansing purposes).
Shampoos and other preparations recommended for use only on dogs, cats, and other pets.
Shaving creams (whether brushless or lather), soaps, powders, or other preparations recommended solely for use in softening the beard preparatory to shaving. (Also see "Electric shaving preparations").
Smelling salts.
Soaps, in cake, powder or liquid form.
Sponges.
Styptics (in pencil, cream, powder or liquid form recommended for use only to stop the flow of blood from cuts in the skin).

Theatrical makeup: Such items as grease paints, clown white, nose putty, black wax, black face for minstrel makeup, and spirit gum are not taxable provided they are not advertised or sold for toilet purposes. However, face creams, toilet powders, lipsticks, rouges, eyebrow and eyelash mascara, eye shadow creams and other preparations which are commonly and commercially known and sold in the trade for toilet purposes are taxable, even though sold for use as theatrical makeup.
Toothbrushes.
Toothpastes and toothpowders.
Tooth stain removers.
Toy makeup kits which contain only imitations of cosmetics or other toilet preparations.
Tweezers.

Zinc oxide (if not recommended for toilet purposes).
Zinc stearate powder (if not recommended for toilet purposes).

HOW PUBLIC RELATIONS HELPS SELL BRISTOL-MYERS PRODUCTS

(*Continued from page 327*)

The president of my company has often stated that "service is the rent a human being pays for the right to live." Let's go one step further. Can't we also say "corporate service is the rent a company should pay for the right to exist and prosper in this country?"

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involvement in projects. You must also believe in them, cooperate with them, and actually participate in them.

Often we participate as a company, and often individual officers or employees participate on their own. But their participation is sincere participation —"the rent for being allowed to be a human being".

I am happy that this active sincere participation in so many projects makes people feel that Bristol-Myers is a good, sound, well-managed company, that only manufactures fine products. We strive hard—very hard—to maintain that reputation for it gives all of us deep personal satisfaction—and it also creates more sales!!

NITROGEN AEROSOLS

(*Continued from page 323*)

Limited Contents: Limitation in the amount of nitrogen that can be safely used (90 to 95 p.s.i.g. at 70° F.) as measured against the minimum pressure required to dispense a particular product dictates the volume of product that can be packaged per unit.

Unlike the liquified propellants, since the compressed gases follow Boyle's Law, the residual pressure will decrease proportionately to the increase in head space as the product is dispensed. Therefore, in order to insure adequate and sufficient dispensing, the amount of product base is limited to approximately 30 per cent to 75 per cent of the volume of container.

Product Variation: There is a gradual diminution in the rate of delivery in relation to the lowering of pressure as the product is dispensed. This is particularly noticeable with the drop-dispensing technique, based on a restricted flow valve that allows the particles of liquid to accumulate in a specially designed valve head to form drops of product.

Due to the variation in flow rate, nitrogen aerosols are not considered practical at this time for products designed to be sprayed.

Residual Loss: Under normal operating conditions approximately 5 per cent to 10 per cent of product remains in the container as a residual loss. The actual amount depends on such factors as viscosity of product, gas loss on storage, distension of dip tube, etc.

Efforts to minimize this residual loss are being made to reduce the amount to under 5 per cent. Silicone application to the interior of the container should be helpful in this connection.

Valve impaction: Since many viscous products are intended for nitrogen aerosol use, consideration must be given to the possibility of drying out of the product base in the valve outlet, causing impaction and subsequent failure of the unit to dispense the contents uniformly or adequately.

It is our considered opinion that in many instances, nitrogen will be used only as a temporary expedient until such time as general approval is given to food and drug use of a regenerating type of propellant such as one of the fluorinated hydrocarbons currently in use or under investigation.

In weighing carefully the several advantages against the inherent limitations in the use of nitrogen for propelling aerosols, we feel that despite such limitations nitrogen, and perhaps argon and other rare gases will enjoy continued but cautious use in this field, primarily because of their inertness and the cost factor.

PATENT THOUGHTS AND TRENDS

(*Continued from page 342*)

"The improved mixed soap embodying this invention may be made in the following manner: one molecular proportion of a soap-forming fatty acid having no less than 18 carbon atoms is mixed with between two and three molecular proportions of triethanolamine and with the desired quantity of a transparent alkali metal soap. The mixture is heated at a temperature within the range of 100°-120° C., preferably 110° C., until the reaction is complete, that is until the mixture exhibits a homogeneous transparency which is maintained on cooling and a pH value of approximately 7.5 in 10 per cent aqueous solution. The duration of the period of heating varies inversely with the temperature, but it is imperative to stop heating when the reaction has proceeded to the proper point indicated above. The period of heating may be readily determined for any particular mixture by simple preliminary experiments to ascertain whether the product obtained after any particular period of heating complies with the two criteria set out above. The product obtained is a mixture of a transparent alkali metal soap with a triethanolamine fatty acid soap and an excess triethanolamine amounting to between one and two molecular proportions per molecular proportion of fatty acid combined in the triethanolamine fatty acid soap. The proportion of alkali metal soap in the mixture should be so chosen that the product has the required characteristics in addition to complying with the criteria mentioned above, that is the product should be sufficiently hard and transparent."

"I have found that if the final product contains at most 60 per cent of transparent alkali metal soap, very good results are obtained."

An idea of the protection obtained is given by claim 1 of the patent, quoted below.

1. A transparent toilet soap composition in solid form, consisting essentially of (1) a transparent sodium soap prepared by saponification of a mixture of tallow, cocoanut oil and castor oil, (2) a triethanolammonium salt of stearic acid, and (3) a quantity of triethanolamine in excess over the theoretical and amounting to no less than one mol and no more than two mols per mol of soap-forming fatty acid, said transparent sodium soap (1)

constituting about 35 to about 40 per cent by weight of the composition and said triethanolammonium salt (2) constituting about 35 to about 40 per cent by weight of the composition, said soap composition having a pH value of approximately 7.5 in 10 per cent aqueous solution and having the ability to neutralize a substantial amount of an acid and of a base without its lathering potency and its pH being affected.

RECENT PATENTS

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2,806,033—M.J. Lewenstein et al.—Morphine Derivatives.

2,806,034—G.D. Searle—3-(Heterocyclic-Substituted Alkyl)Thianaphthenes.

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2,806,039—Upjohn—Steroid Intermediates.

2,806,041—G.D. Searle—4-Androsten-3-One Derivatives.

2,806,042—G.D. Searle—5-Androsten-3-01 Derivatives.

2,806,043—Am. Cyanamid—16-Alpha Oxy-$\triangle$1,4-Pregnadienes.

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2,806,814—Colgate-Palmolive—Dental Preparations.

2,806,815—Ortho Pharmaceutical—Stabilized Hyaluronidase.

2,806,849—G.N.R.D. Patent Holdings (England)—Prepn. of 3-Hydroxy-11-Keto Steroids.

2,806,850—Irwin, Neisler & Co.—1-(2-Ethyl-1, 2, 3, 4 Tetrahydroisoquinolinium) - 3 - (Trimethyl - ammonium)-Propane Disalts.

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2,806,858—Spofa (Czechoslovakia) — New Anticoagulants.

2,806,863—Upjohn—9_α-Halo-11β, 17β,-Dihydroxy-17 Methyl-Androstane-3-Ones.

2,806,864—Merck—4, 17(20)-Pregnadien-21-AL-20-OL-3, 11-Dione.

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2,807,566—Smith, Kline & French Labs.—Potentiating Drugs Affecting the Central Nervous System.

2,807,567—Saul & Co.—Prepn. for Treatment of Allergic Diseases.

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2,807,568—Am. Cyanamid—Therapeutic Compositions of Tetracycline Group Antibiotic and Para-Hydroxybenzoic Acid Ester.

2,807,569—Organon—ACTH Composition.

2,807,610—J. T. Baker Chem. Co.—Hydrogenated Clinical Dextran.

2,807,616—Burroughs Wellcome—Oxazolopyrimidines.

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2,807,624—Geschickter Fund—Bis-Isoindole Quat. Salts.

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2,807,632—Chas. Pfizer—Hydroxylated Ergosterol.

2,807,644—Parke, Davis—Pantethine Inhibitors.

2,808,360—Lepetit (Italy)—Cough-Combatting Compositions.

2,808,363—Upjohn—Erythromycin Process.

2,808,364—Schenley—Streptomycin by Culture Immune to Phage.

2,808,399—G. D. Searle—20-Arylazo-5, 17(20)-Pregnadien-3, 16a-Diols.

2,808,410—Ciba—Reserpone.

2,808,411—Geigy—4-Substituted-1, 2-Diaryl-3, 5-Dioxo-Pyrazolidines.

2,808,413—Geigy—Imidazoline Derivatives of 2-Aryl Indolines.

2,808,414—Norwich Pharmacal—5-Nitro-2-Furaldehyde 4-(p-Arsonophenyl) Semicarbazone.

2,808,415 — Merck — Diketo Dihydroxy Oxygenated Pregnadienes.

2,808,438—Ciba—Tris-(Dialkylaminoalkyl)-Amines.

2,809,116—Armour R. F.—2, 4, 6-Trinitrobenzoate Ester-Addition Compound Indicator.

2,809,149—F. R. Cusumano—Antibiotic - Impregnated Gauze Pads.

2,809,151—Upjohn—Erythromycin Process.

2,809,166—G. E. Morris—Skin Cleanser Composition.

2,809,198—Ciba—Tetradehydrodeserpidic Acid Compounds.

2,809,199—Ciba—Intermediates for Rauwolseine.

2,809,200—Geigy—N-Acylated Substituted Iminodibenzyl Derivatives.

2,809,201—C. F. Koelsch—Bengofurohexahydropyridines.

2,809,215—Hoffmann-La Roche—Higher Aliphatic Ketones.

2,809,216—Hoffmann-La Roche—Polyene Aldehyde and Alcohols.

2,809,217—Hoffmann-La Roche—Acetylenic Ethers.

2,809,892—Commercial Solvents—Zinc Bacitracin Feed Supplement.

2,809,895—Sunkist Growers—Solid Flavoring Composition.

2,809,913—Warren-Teed Products—Dimethyltoluthionine Chloride Hemostatic Composition.

2,809,914—Am. Cyanamid—Encephalomalacia Treatment Compositions Containing 2, 6-Ditertiary-Butyl-4-Methyl Phenol and Methods of Using Same.

2,809,915—Abbott Labs.—Parenteral Composition of Water Soluble Penicillin Salt and Penicillin Salt of N-Methyl-(2-Hydroxy-1, 2-Diphenylethyl)-Amine.

2,809,916-8—V. M. Hermelin—Sustained Release Pharmaceutical Preparations.

2,809,919—Chas. Pfizer—3-Keto-$\Delta^{1,4}$-Steroids From 3-Keto-Δ^{4}-Steroids with Micromonospora.

2,809,920—Saul & Co.—Preparation of Ergotamine, Ergotaminine and Ergometrine.

2,809,937—Colgate - Palmolive—Germicidal Detergent Composition.

2,809,966—Wordmark-Werke (Germany)—P-Aminobenzene Sulphonyl-2-Amino-4, 5-Dimethyl-Oxazole.

2,809,968—Soc. des Usines Chimiques Rhone-Poulenc—Phenthiazine Therapeutics.

2,809,969—Bristol Labs.—Isoquinolones.

2,809,970—Sherman Labs.—Stable Thiamine and Pyridoxine Hydrochloride Solutions.

2,809,971—Olin Mathieson—Heavy-Metal Derivatives of 1-Hydroxy-2-Pyridinethiones.

2,809,974—Eli Lilly—Substituted-Benz[CD] Indoles.

2,809,977—Olin Mathieson—Steroids.

2,809,978—Merck—Intermediates Useful in the Synthesis of -Lipoic Acid.

2,809,996 — Firmenich & Co. (Switzerland) — Compounds Having an Ambergris Scent.

2,810,676—Dow—Anthelmintic Solutions Containing Piperazine.

2,810,718—Abbott Labs. —Basic Salicylamides.

2,810,719—Abbott Labs.—Morpholino Alkyl Ethers of Hydroxy-Benzoic Acid Esters.

2,810,723—Saul & Co.—Lysergic Acid Derivatives Acylated at the Indol Nitrogen.

2,810,725—Olin Mathieson—Pyridoxal Derivatives of Isonicotinic Acid Hydrazide.

2,810,729 —Merck—Dodecahydrophenanthrenes.

2,810,734—Schering—11-Keto Steroid Intermediates.

2,810.743—Cutter Labs.—2-Ammonio-Ethyl 3-Ammoniopropionates.

2,810,758—Wisconsin Alumni R. F.—Steroid.

2,811,468—Shulton—Perfume - Impermeable Polyethylene Containers.

2,811,481—Commercial Solvents—Zinc Neomycin.

2,811,482—Armour—Adrenocorticotrophin and Oxypolygelatin Compositions.

2,811,483—Chas. Pfizer—Pharmaceutical Beadlet Composition.

2,811,517—Commonwealth England—Iodo-Dextran.

2,811,520—Soc. des Usines Chimiques Rhone-Poulenc—Iminodibenzyls.

2,811,523—Dow—3, 4-Dihydro-2H-1, 3-Benzoxazines.

2,811,524—Am. Cyanamid—3-[Beta-KetoGamma-Tetrahydro-2-Propyl]-4-Quinazolones.

2,811,525—Ortho Pharm.—2, -Amino-4-Alkyl, Aryl, and Aralkyl-Mercaptoalkyleneaminopyrimidines.

2,811,526—G. D. Searle—1-heterocyclyl-2-Diphenoxyethyl-idenimines.

2,811,527—Olin Mathieson—Thieno (3,2-B) Pyridines.

2,811,529—Chas. Pfizer—Naphthylamino Oxazolines.

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2,811,531—Merck—Lipol.
2,811,534—United Pharm. Works (Czechoslovakia)—Preparation of Biologically Active Coumarines.
2,811,537—Merck—Triketo - Hydroxy - Acyloxy - Pregnadiene.
2,811,561—Eastman Kodak—Vitamin A. Aldehyde Preparation.
2,812,283—Geschickter—Therapeutic Solvent Vehicle.
2,812,284—Procter & Gamble—Oral Detergent Composition.
2,812,323—Eli Lilly—Dis-N-Methyl Erythromycin.
2,812,325—L. C. Cheney—Amine Salt of Penicillin.
2,812,327—Dr. Karl Thomae (Germany)—Basic Ethers of Carbinols Substituted by Endocyclic Groups.
2,812,328—Imperial C. I.—Pyrimidines.
2,812,330—G. D. Searle—Sulfone Derivatives of 2,6-Piperidinedione.
2,812,331—Hoffmann-La Roche — Substituted Butyric Acid Amides.
2,812,334—Upjohn—Organic Compounds.
2,812,335—G. D. Searle—Benzoquinone Adducts of Dioxygenated Steroids.
2,812,444—Ortho Pharmaceutical—Ferrous Calcium Citrate Complex.
2,812,348—G. D. Searle—N-Alkyl-N-Benzhydrylaminoalkyl Esters of N,N-Dialkylamino-alkanoic acids.
2,812,349—Chas. Pfizer—Alkanoic Acid Esters of Tetracycline Antibiotics.
2,812,353—Hoffmann-La Roche—6-Phenyl-5-Hepten-2-One.
2,812,354—Hoffmann-La Roche—Poylene Aldehydes.
2,812,359—Badische—Hydroxy Ethers Having an Action Similar to Curare.
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2,813,820—Chas. Pfizer—Antibiotic Compositions Containing Oxytetracycline and Polymyxin.
2,813,857—Geigy Chem. Corp.—N-Aminoalkylated Substituted Iminodi-Benzyl Derivatives.
2,813,861 — Endo Labs. — Pyrrolidino-Aceto-2,6-Dimethyl-Anilide Salt of Mercumallyic Acid.
2,813,862—Organon—Preparation of Heterocyclic Compounds Employing Acetylene Ethers.
2,813,865—Sterling Drug—Mercury Derivatives of Triazabicyclo Nonane Diones.
2,813,866 — Sterling Drug — Triazabicyclo Nonene Diones.
2,813,867—Sterling Drug—Dicarbamyl Tetrahydropyridazines.
2,813,868—Bayer (Germany) Heterocyclic Quinones.
2,813,871—Ciba—O-Syrincoyl Reserpic Acid Esters.
2,813,872—A. Wander A.G. (Switzerland)—Sympatholytic Allyl Amines.
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2,813,874—Am. Home Products—Azacyclohexanes.

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ADVERTISING INDEX

American Aromatics, Inc. 393
American Can Co ..... Facing 336
American Cholesterol Products, Inc. 384-385
Anchor Hocking Glass Co. 340-341
Archer-Daniels-Midland Co. ..... Facing 284
Arenco Machine Co. 396
Atlas Powder Co. 274-275
Avon Products, Inc. 277

Baker & Bros., H. J. 388-389
Baker Chemical Co., J. T. 354
Brunswick Labs., Inc. 407

Camilli, Albert & Laloue, Inc. 408
Campbell Box & Tag Co. 405, 407
Carr-Lowrey Glass Co. 328
Cavalla, Inc., A. 405
Chiris Co., Inc., Antoine 383
Chrystal Co., Inc., Charles B. 391
Colonial Applicator Co. 324
Colton Co., Arthur 358
Commercial Solvents Corp. 291
Continental Oil Co. 292
Crown Cork & Seal Co., Inc. 326

Delta Chemical Works 407
Distillation Products Industries 289
Dodge & Olcott, Inc. 285
Dow Corning Corp. ..... Facing 277
Dragoco, Inc. ..... Bet. 284-285
du Pont de Nemours & Co., Inc. 330
Durlin Co. ..... Facing 353

Eastman Chemical Products, Inc. 381
Emery Industries, Inc. ..... Facing 292
Encapsulations, Inc. 393
Engelhard Industries, Inc. ..... Facing 337
Ertel Engineering Corp. 405

Fairmount Chemical Co., Inc. 407
Felton Chemical Co., Inc. ..... Bet. 276-277
Firmenich, Inc. 370
Fisher Chemical Co., Inc. 392
Florasynth Labs., Inc. 284
Fritzsche Bros., Inc. ..... Bet. 368-369

General Aniline & Film Corp. 294
General Chemical Div., Allied Chemical & Dye Corp. 335
Givaudan-Delawanna, Inc. ..... Bet 300-301, Facing 345
Glycerine Producers Association 281
Gottscho, Inc., Adolph 398
Griffin-Rutgers, Inc. 394
Gross & Co., A. 357

Harchem Div., Wallace & Tiernan, Inc. 381
Haring Equipment Corp. 395
Hazel-Atlas Glass—Div. of Continental Can Co. 343
Hercules Powder Co. 280
Hoffmann-La Roche Aromatics Div. 379
Hoffmann-La Roche, Inc. 269, 348
Huisking & Co., Charles L. 395

Ising Corp., C. E. 407

Knox Glass, Inc. 322
Kohnstamm & Co., H. ..... Facing 352
Kolar Labs., Inc. 273
Kolmar Labs. ..... Facing 285

Lautier Fils 373
Lueders & Co., George 288

Mallinckrodt Chemical Works ..... Facing 301
Maryland Glass Corp. 320
Mathieu, Inc., Charles 397
Metalsmiths Div. of Orange Roller Bearing Co. 397

National Aniline Div., Allied Chemical & Dye Corp. ..... Facing 293
New Jersey Zinc Co., The 390
New York Quinine & Chemical Works ..... Facing 276
Norda Essential Oil & Chemical Co. ..... Cover 2

Old Empire, Inc. 399
Orbis Products Corp. 287
Owens-Illinois Glass Co. 318-319

Parsons Plymouth, Inc., M. W. 386
Penick & Co., S. B. 346
Pennsalt Chemicals Corp. 338
Pennsylvania Refining Co. 272
Perl Machine Mfg. Co., Inc. 391
Pfaltz & Bauer, Inc. 407
Pfizer & Co., Inc., Charles ..... Cover 4
Pneumatic Scale Corp., Ltd. 362
Polak's Frutal Works 276
Popper & Sons, Inc. 392
Potdevin Machine Co. 399
Progressive Machine Works 407

Rawleigh Co., The W. T. 396
Reheis Co., Inc. 282
Richford Corp. 332
Ritter & Co., F. 401
Robinson Wagner Co., Inc. ..... Facing 300
Rohm & Haas Co. 283
Ross & Son Co., Inc., Charles 387

Shulton, Inc. 278
Standard Pharmacal Co. 401
Sterwin Chemicals, Inc. 271
Stokes Corp., F. J. 364-365
Synfleur Scientific Labs., Inc. 290

Ungerer & Co. ..... Cover 3
Ultra Chemical Co. ..... Facing 344
Upjohn Co., The 286
U. S. Bottlers Machinery Co. 360
U. S. Industrial Chemicals Co., Div. of Nat'l Distillers & Chem. Corp. ..... Bet. 376-377

van Ameringen-Haebler, Inc. 350-351
Van Dyk & Co., Inc. 298
Verley & Co., Albert 279
Verona Chemical Co. 375
Vitamerican Oil Corp. 403

Welch, Holme & Clark Co. 403
Will & Baumer Candle Co., Inc. 296
Wallace & Tiernan, Inc. 381